

Optimizing service differentiation scheme with sized-based queue management in DiffServ networks

ABSTRACT

In this paper we introduced Modified Sized-based Queue Management as a dropping scheme that aims to fairly prioritize and allocate more service to VoIP traffic over bulk data like FTP as the former one usually has small packet size with less impact to the network congestion. In the same time, we want to guarantee that this prioritization is fair enough for both traffic types. On the other hand we study the total link delay over the congestive link with the attempt to alleviate this congestion as much as possible at the by function of early congestion notification. Our M-SQM scheme has been evaluated with NS2 experiments to measure the packets received from both and total link-delay for different traffic. The performance evaluation results of M-SQM have been validated and graphically compared with the performance of other three legacy AQMs (RED, RIO, and PI). It is depicted that our M-SQM outperformed these AQMs in providing QoS level of service differentiation.

Keyword: QoS; AQM; Packet scheduling; Service differentiation; LIBS; M-SQM dropping; Early congestion notification