Journal of Advanced Research in Dynamical and Control Systems
ISSN 1943-023X

Enhanced Dynamic Bandwidth Allocation Proportional to Reduce the Transmission Time

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Abstract:

In the computer networks searching for the available bandwidth for each connection is performed using methods based on the feedback between source and destination. Protocols using algorithms, based on these methods, define a distribution point and discarding packets when the available bandwidth is exceeded by the flow at the critical are of the network. This paper proposes a method allows proportionally redistribute the bandwidth at the critical area taking into account the properties of traffic fractality by predicting its intensity based on calculating the conditional probabilities of the quantized values of the latter. In this work, a mathematical model of traffic at the entrance of the critical area and clarified the features of the traffic in these areas have been obtained. Proportional distribution reduces the number of iterations of the distribution point search and provides an increase in the proportion of bandwidth provided for traffic. In this method, unlike analogues, the distribution point between the service and information traffic provides a proportional distribution of the bandwidth, which makes it possible to reduce the number of iterations of the distribution point search based on packet loss and to provide an increase in the proportion of the bandwidth provided for the transmission of user information traffic.

Issue: 14-Special Issue

Year: 2018

Pages: 2024-2033