

Anomaly Problem in WLANs, Insight on Possible Solutions

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Abstract

Despite being robust and efficient within a small Wireless Local Area Network (WLAN), the CSMA/CA fails to satisfy the QoS requirements for many users in large networks due to a set of known shortcomings. For example, IEEE 802.11 WLANs present a MAC anomaly when users in the same Basic Service Set (BSS) employ different transmission rates. This paper addresses the performance anomaly in such a network. We show how this behavior influences the performance users experience under different application scenarios. Also, we point out to some concepts in order to overcome this undesired behavior. The work included in this paper is expected to trigger and initiate numerous approaches for the investigation of the presented concepts. The presented results are obtained through detailed simulation experiments conducted using the NCTUns Simulation package. Both FTP and VoIP traffic were used in the experiments.