Abstract

Large deployment of IEEE 802.11 wireless LANs (WLANs) is perceivable in the present world. In order to reduce interference in the spectrum, the 802.11 standard specifies the use of several orthogonal channels. It is established that the static channel assignments are inadequate to handle the traffic variations effectively, besides some of the channels being underutilized in these types of networks. So we need to employ a dynamic channel allocation algorithm, to determine the optimal channel to be used at any given time and place. If a channel allocation scheme does not consider the other sensitive network issues such as bandwidth allocation, power available at the node etc., it may increase medium access contention and co-channel interference, adversely affecting the aggregate capacity of the network. This paper envisages a channel assignment scheme with the objective of maximizing bandwidth with fairness consideration to equalize the bandwidth assignment of flows. Here we propose an adaptive channel allocation scheme for 802.11 networks which takes into account the available bandwidth at each node and also provides the throughput and the QoS to the wireless services. Computer simulation of our proposed adaptive scheme, using the ns2 software reveals a perceptible improvement of data throughput performance over fixed assignment algorithms.

References
Optimal Channel Allocation Mechanism to Improve the QoS in Wireless Networks


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**Index Terms**

Computer Science

Wireless Networks
Keywords
 IEEE 802.11  Bandwidth  Adaptive Channel Assignment  Quality Of Service