

IEEE 802.16 網狀網路使用令牌桶之允入控制

摘要

本論文對 IEEE 802.16 協調分散式之網狀網路提出一允入控制之演算法。在此類網路中，控制子訊框交換各站台之排程訊息，並預留資料子訊框之時槽作為實際資料傳輸之用。我們利用令牌桶機制來控制網路訊流之流量特徵，如此可簡單的估計各訊流所需之頻寬。我們使用了所提出的頻寬估計方法，並一起考慮各訊流之跳接數與延遲時間之需求，提出的允入控制演算法能夠保證即時性串流之延遲時間需求，且可避免低等級訊流發生飢餓情形。模擬結果顯示，所提出的允入控制方法可以有效的把超過延遲時間需求之即時性訊流封包數目降低，並且低等級訊流在網路負載大時仍然可以存取頻道。

Call Admission Control Using Token Bucket for IEEE

802.16 Mesh Networks

Abstract

We propose a routing metric (SWEB: Shortest-Widest Efficient Bandwidth) and an admission control (TAC: Token bucket-based Admission Control) algorithm under IEEE 802.16 coordinated, distributed mesh networks. In such network architectures, all scheduling messages are exchanged in the control subframes to reserve the timeslots in data subframes for the actual data transmissions. The token bucket mechanism is utilized to control the traffic pattern for easily estimating the bandwidth of a connection. We apply the bandwidth estimation and take the hop count and delay requirements into consideration. TAC is designed to guarantee the delay requirements of the real-time traffic flows, and avoid the starvation of the low priority ones. Simulation results show that TAC algorithm can effectively reduce the number of real-time packets that exceed the delay requirements and low priority flows still can access the channel when the network is heavily-loaded.