

Analysis of a CSMA/CD Priority Protocol

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Abstract

The paper discusses a priority scheme for CSMA/CD. We regulate priorities in CSMA/CD by using only their transmitting probabilities. This simple scheme incurs no extra overhead and yet demonstrates very good results in one case, it shows 97.8% throughput for the high priority class even if it represents only 10% of the total arriving traffic. Our analysis is based on finite number of stations and, in each station, finite number of buffers. The role of buffers in priority arbitration is also characterized. The only deviation of our protocol from standard CSMA/CD is collided packets are not rescheduled.

Keywords: CSMA/CD (Carrier Sense Multiple Access with Collision Detection), LAN (Local Area Network).