A Dynamic Scheme for Connection Admission Control in ATM Networks

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Abstract

This research considers a dynamic scheme for connection admission control(CAC) in asynchronous transfer mode(ATM) networks. CAC is newly instituted in ATM networks for avoiding any congestion incurred due to the high-speed transfer nature and bursty characteristics of traffic streams, so that it is desirable to construct a dynamic scheme for CAC to increase network utilization at a required service quality. The scheme is modeled as an M/M/s/N pure loss queueing system with customers allowed only to leave the system at exponential inter-departure times when the number of busy servers exceeds a certain threshold value, but with customers filled up to at the number N, otherwise. Due to computational complexity, the queueing system is analyzed in a way approximate to what will be required. A simulation experiment is also performed to show the effectiveness of the proposed scheme.