

Abstract

Guaranteed Frame Rate is a ATM new service category and improvement of UBR (Unspecified Bit Rate), which intended to provide legacy applications, especially TCP/IP data application, with minimum rate guaranteed at the frame level. Minimum bandwidth guaranteed with this minimum rate would improve transmits performance TCP packets over ATM network. For this reason, a buffer management mechanism was needed to support GFR service category that guaranteed minimum cell rate and utilize available reserved bandwidth effectively.

This paper will discuss a buffer management mechanism with controlling allocation and dropping frames TCP from VC's into buffer switch ATM network with Fuzzy Logic Controller mechanism. The system called Fuzzy Fair Buffer Allocation (FFBA) used fuzzy logic for admitted and discarded entire packets TCP. The aim of this controlling is to provide minimum cells rate (MCR) guarantees on VC's GFR TCP source. This buffer management method implemented on FIFO buffer which used by several VC.

Simulation showed that throughput gained by each VC excess MCR traffic contract. This showed management buffer FFBA can provide guaranteed minimum rate to every VC for sending TCP packets.

Key Word:

ATM (Asynchronous Transfer Mode), GFR (Guaranteed Frame Rate), TCP/IP (Transmission Control Protocol/Internet Protocol), MCR (Minimum Cell Rate), Fuzzy Logic Controller, FFBA (Fuzzy Fair Buffer Allocation).