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CONGESTION CONTROL IN ATM NETWORK USING DOUBLY FINITE QUEUE IN MSVDR ALGORITHM

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Abstract

The ATM forum has proposed the Private Network-Network Interface (PNNI) specification to facilitate routing in ATM networks, pre-path selection (or) routing algorithms that guarantee a user's multiple Quality of Service (QoS) requirements remain an open issue. In this paper, we consider Multi – Source Virtual dynamic QoS Routing in an integrated-services environment where some of the offered traffic streams are dynamic. While there has been work on routing performance in the presence of purely stationary traffic, the presence of dynamic traffic has received very little attention. We consider here two routing schemes: Multi-Source Virutal Dynamic Routing (MSVDR), ierarchical Based Least Loaded Routing with Periodic update (HBLLR). Based on simulation, we have found that while MSVDR performs and adapts better than Backward Hierarchal Routing Algorithm (BHRA) in the case of no trunk reservation, it is other way around when there is moderately high trunk reservation (even for less frequent routing updates). Further, we found that dynamics of a traffic class can result in dynamic flow blocking behavior even on stationary traffic, especially at a low or no trunk reservation level. This proposed Algorithm (MSVDR) reduce the Reservation Time, Minimize the Queue length, Fast route recovery, Maximum link utilization and Good throughput compare to the other Routing Algorithms.

Keywords: PNNI, Routing, Queue Management, QoS, LLR.