

Abstract

This study will investigate ATM traffic with different types of setting prioritized multimedia sources such as voice, video and data. The gain in performance due to real time processing is studied with a series of setting prioritized examples. The results show that an appropriate point can be obtained by giving highest priority to voice and video. From the examples, we found that 3 : 3 : 1 this is the priority setting between voice : video : data which give the lowest resident time. Moreover we found that the video traffic can be reduced by applying the compression technique. The results show that for each arrival time and each video volume will has different type of applying the compression rate. From the examples, when we set the video volume = 183174 bytes, the appropriate compression rate for arrival time = 10 microsecond is 22 percent. If arrival time = 12, appropriate compression rate is 20 percent. If arrival time = 17, the appropriate compression rate is 10 percent. If arrival time = 30, the appropriate compression rate is 8 percent. Beside this, we will examine an appropriate buffer size of ATM switch which is processing a congested incoming traffic. We also investigate how to minimize number of cells loss for fixed size buffer and how to allocate an overflow on each ATM switch due to high congested traffic. The results show that an appropriate buffer size is 48 kilobytes for each ATM switch. It gives the highest utilization of buffer's cost, and number of cells loss on ATM switch. Thus, this investigation can apply to the real ATM network in order to ease multimedia traffic and will improve service for any real time traffic.