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Implementation of A Dynamic Routing Algorithm on Network Processor

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Increase in broadband based applications have made Internet traffic more bursty. Such bursty traffic leads to higher delay jitter, which can considerably decrease the quality of real time applications like video-conferencing. High bandwidth broadband applications which experience high delay jitter, thus require a better control over traffic conditions to meet the Quality of Service (QoS) requirements than just overprovisioning with high bandwidth pipes. This thesis attempts to propose two solutions to enhance the traffic control capabilities. An MPLS based tool is developed for resource allocation and path selection based on class of service. The second approach is to have real time routing decisions based on the traffic conditions and hence tackle the issues of load balancing of traffic over the entire network. Above mentioned approach is implemented in the latter section of the report. A high performance networking platform, Intel's IXP1200 is used for implementing a traffic engineering solution at the routing level. A brief introduction to this platform is followed by the implementation of a dynamic, real-time routing algorithm on the network processor. The implementation is done with the purpose of performance evaluation of the algorithm over IXP1200.