Comparison of IP, MPLS and MPLS RSVP-TE Networks using OPNET

Abstract

The main components of a network are vital to its enhancements by providing reliable services. Different technologies have been put in place to enhance application services in a network. MPLS is one of such technologies and it provides a reliable delivery of application services. It delivers services with low delays, low losses and high speed of transmission. Due to the Traffic Engineering feature of MPLS, it can be used to efficiently utilize network resources as well as implement real-time applications (voice and video). Signalling protocols such as RSVP-TE and CR-LDP are used for Traffic Engineering in MPLS. In this research, the modelling of IP, MPLS and MPLS RSVP-TE (with path reserved for voice traffic) networks are presented and the performance parameters of the networks are compared. OPNET modeler 16.0 is used to simulate all the networks and the comparison is made for parameters such as throughput, utilization and voice jitter.
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Index Terms

Computer Science
Communication Networks

Keywords
RSVP-TE  OPNET simulator