

## Real Time Traffic Performance Study over MPLS VPNs with DiffServ

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**Abstract :** With the arrival of higher speed communication links and mature application running over the internet, the requirement for reliable, efficient and robust network designs rising day by day. Multi-Protocol Label Switching technology (MPLS) Virtual Private Networks (VPNs) have committed to provide optimal network services. They are gaining popularity in industry day by day. Enterprise customers are moving to service providers that offer MPLS VPNs. The main reason for this shifting is the capability of MPLS VPN to provide built in security features and any-to-any connectivity. MPLS VPNs improved the network performance due to fast label switching as compare to traditional IP Forwarding but traffic classification and policing was still required on per hop basis to enhance the performance of real time traffic which is delay sensitive (particularly voice and video). QoS (Quality of service) is the most important factor to prioritize enterprise networks' real time traffic such as voice and video. This thesis is focused on the study of QoS parameters (e.g. delay, jitter and MOS (Mean Opinion Score)) for the real time traffic over MPLS VPNs. DiffServ (Differentiated Services) QoS model will be used over MPLS VPN network to get end-to-end service quality.

**Keywords :** network, MPLS, VPN, DiffServ, MPLS VPN, DiffServ QoS, QoS Model, GNS2

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