Abstract

Over the last two decades, we have witnessed a rapid deployment of real-time applications on the Internet and many research works focus on Quality of Service (QoS), in particular using IPv4 (Internet Protocol Version 4). The inevitable exhaustion of the remaining IPv4 address pool has become progressively evident and as a result the evolution of Internet Protocol (IP) continues leading to the deployment of IPv6 QoS. Today, there is limited experience in the deployment of QoS for IPv6 traffic in MPLS backbone networks in conjunction with DiffServ (Differentiated Services) support. DiffServ itself does not have the ability to control the traffic flow whereas MPLS Traffic Engineering (TE) can control the traffic and can set up end-to-end routing path before data can be forwarded. Multi-Protocol Label Switching (MPLS) plays a key role in next generation networks by delivering QoS and traffic engineering features which is helpful in managing traffic when some links or paths are under and/or over utilized. This paper presents a QoS performance study of some applications such as voice, video conferencing, mail and web over DiffServ with MPLS in IPv4/IPv6 networks using Optimized Network Engineering Tool (OPNET). The effectiveness of DiffServ and MPLS integration in IPv4/IPv6...
network is illustrated and analyzed.

References

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Index Terms

Computer Science Networks
Keywords

MPLS, IPv4, IPv6, QoS, OPNET, OSPF.