PERFORMANCE ANALYSIS OF VIDEO TRAFFIC OVER MPLS-TE WITH DIFFSERV

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ABSTRACT

At present, Service Providers (SP) are in the midst of evaluating and evolving their various networks to a single converged Internet Protocol (IP) -based network infrastructure which able to use the existing and future services. Despite of having many options proposed, it is still a challenging task to implement Quality of Service (QoS) in IP based network. Differentiated Services (DiffServ) as one of the QoS mechanism, has become the mainstream of QoS solution. With DiffServ mechanism, traffic can be classified based on the priority to provide quality of service in order to meet the Service Level Agreement (SLA). Multi-Protocol Label Switching (MPLS) with Traffic Engineering (TE) complements DiffServ mechanisms to perform better in providing QoS architecture. This paper discussed and analyzed performance of video traffic over MPLS Traffic Engineering (TE) with DiffServ using a set of traffic model for video and data. Four different network scenarios were chosen which include different type of scheduling mechanism in QoS application. Performance parameters such as end to end delay, throughput, and Packet Delay Variation (PDV) were compared and analyzed. The comparative study showed that Priority Queuing (PQ) has generally improved the performance of video traffic compared to MPLS-TE only network and other types of scheduling mechanism.

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CHAPTER 1

1 INTRODUCTION

1.1 Introduction

This chapter explains the project overview, problem statement, objective, scope and limitation and the thesis outline. With the aggressive Internet market nowadays, service providers and IT companies need to increase their data speed, a better way to enhance the network performance. Furthermore, high speed network is able to adapt various type of traffic with a minimum congestion. In this situation, a comprehensive study or research needs to be done in order to have better planning strategy. This is crucial for service provider so that available bandwidth can be well managed with traffic prioritization in place.

1.2 Project Overview

One of the common value added services users seek from the service provider is the Quality of Service (QoS). Quality of Service (QoS) is not only a value added services but is a must to any corporate or enterprise customers which require high reliability network to connect to their branches. In another hand, Quality of Service (QoS) also is very crucial to the Financial Institution such as Banking or Insurance companies which requires high reliability, prioritization and security of their traffic across the internet network.