ADSL: CAPACITY VS REACH OF A SYSTEM ON A VARIABLE LOOP LENGTH

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ABSTRACT

This project contains the analysis of ADSL performance. The performance is based on loop length, cable quality and cable size. It is measured, monitored and analysed. The result is tabulated and then plotted using MATLAB. Different cable length and cable diameter are used to analyse ADSL performance. The measurement indicated that cable length as the main factor in determining the performance quality of ADSL. Larger cable size seems to give better data rates. New cables are found to perform better than old ones. Besides that the system's architecture and infrastructure is discussed.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Introduction

The purpose of this project is to discuss Asymmetric Digital Subscriber Line (ADSL). ADSL is a standard for digital communications between client and remote network host. ADLS generally offers downstream rates of about 5122 kbps to 8 Mbps. This is a revolutionary increase in subscriber speed with the closest commercial match in Europe at the moment being ISDN offering 64 kbps to 128 kbps. ADSL offers high-speed remote network connections on conventional phone lines without the need to install expensive backbones. This brings sophisticated client speeds to the home user at a low cost. This is what makes ADSL so special.

In Web applications speed is the key issue at the moment, everyone wants faster connections and cheaper! ADSL meets both these requirements offering amazing speed increase at a relatively low cost, to both provider and consumer. Seemingly ADSL is the magic solution but it does suffer from one major weakness: signal attenuation in the copper, which increases with increasing line length, increasing signal frequency and decreasing line gauge.

ADSL is going to bring future entertainment to the computer at the same quality and speed as your television. The way will be paved for digital video conferencing and other such applications. ADSL will revolutionize the way we think about the World Wide Web, information superhighway? Not without Asymmetric Digital Subscriber Line.