BORANG PENGESAHAN STATUS TESIS

JUDUL: VIDEO STREAMING PERFORMANCE ANALYSIS

SESJI PENGAJIAN: II / 2008

Saya MAHATHIR MOHAMAD BIN LAZIM

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VIDEO STREAMING PERFORMANCE ANALYSIS

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This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Computer Networking)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2008
DECLARATION

I hereby declare that this project report entitled

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To my lovely bonda Yasimah Abdullah
and supportive ayahanda Lazim Ali.
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Video Streaming Performance Analysis is a project of analyze the performance of video streaming software over the network. This project will give so many benefits to user that want to enable video streaming services at their network. The performance of video streaming software will be test on analyzer tools Ethereal Network Analyzer. Ethereal Network Analyzer will be used to test the ability of video streaming software especially from aspects of protocol and byte. Some of the objectives of this project are such as to configure, implement, testing and aspect affecting performance of video streaming performance. Besides that, the scopes of the system are the analysis will be done for main aspects including protocol and byte. This project will determine the best streaming performance software. Then, this project also will cover on Local Area Network (LAN) network environment using video on demand application. The project methodology is using Top-Down Design Approach method. The video streaming software requirements for the project are Windows Media Player and Real Player in LAN environment. This project must be carry on because it will give so many benefits especially for intranet users in the future.
Abstrak

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<td>VOD</td>
<td>Video on Demand</td>
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<td>User Datagram Protocol</td>
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CHAPTER I

INTRODUCTION

1.1 Project Background

Internet technology is changing at a rapid pace and the faster the technology changes, the more people expect from the Internet. Users were once satisfied with text and still images on their web pages. Now they want to see video and want it fast. Users want the quality to be as good as what they see on their television.

Video streaming is one way to deliver video over the Internet. Though far from a perfect solution, streaming video technology is becoming more powerful all the time. With video streaming, designers can broadcast lectures, make announcements, deliver seminars, or show exactly how something is supposed to work. Users can see it anytime, quenching some of their thirst for fast, high-quality video. Video streaming provides flexibility as well. Users can view what they want and when they want.

This project is all about video streaming performance analysis. This project will research aspect behind video streaming from the beginning until it analyze in Microsoft Windows Server 2003. The video streaming will implemented on Local Area Network (LAN) environment using video on-demand application. This project will be focused on two (2) video streaming software includes Windows Media Player and Real Player.
This software will be setup in two (2) streaming servers. The servers are Windows Media Service (Windows Media Player) and Helix Server (Real Player). This project will analyze of video streaming software using Ethereal Network Analyzer tool to test the ability of video streaming software and the aspect will be analyze are protocol and byte.

1.2 Problem Statements

There are problem statements that cause and this project must be done and how this project can solve those problems. From the analysis that has been made, some problem has been occurs on current video streaming. The problem statements are as the following:

1. Different network architecture.
   Different network architecture may need the different technique to implement video streaming. The implement and configure video streaming on Local Area Network (LAN) need different technique to other network environment.

   Most streaming video users don’t emphasize the aspect affecting the performance behind video streaming such as protocol and byte.

3. Different technologies on software.
   Competing technologies among Windows Media Player and Real Player present a problem for users. Different software has different capabilities and own advantage. This will depend on how process to configure and implement video streaming tested on that software.
1.3 Objectives

The objectives that will be achieved throughout this project are:

1. Implement video streaming on Local Area Network (LAN) environment using video on-demand application.

2. Analyze the aspect protocol and byte which affecting video streaming performance.


1.4 Scopes

The scopes in this project will cover such as project limitation and project environment. The scopes involves in this project are:

1. This project will research the video streaming performance over Local Area Network (LAN) environment.

2. The analysis of video streaming performance will be done through protocol and byte aspects.

3. This project will use method streaming video on-demand application.

4. This project will determine the best streaming performance software.
1.5  Project Significance

This project is about video streaming performance analysis. This project will research about the architecture of video streaming to understand how video streaming works. From architecture, it easy to know how video streaming software work in network environment and we will know how to meets the requirements that needed in video streaming. This project will ensure the video streaming software will meets all the specification that needed.

The project significance would give many benefits to the users who want to implement and use video streaming over their network. This is because they can get the high quality video streaming if they are using the best video streaming software within the suitable network architecture. This project is important because there is much video streaming software in the market that we are not sure about their performance or ability. With this project, it will determine the best streaming performance software.

1.6  Expected Output

The analysis of video streaming performance will be done through several aspects which are streaming protocol and byte. This project will research on how the video streaming performance over Local Area Network (LAN). This project will test method streaming video on-demand application.

1.7  Conclusion

The main purpose of this project is performance analysis of video streaming software will focus about the architecture, software, implementation, analysis and performance of video streaming. For the conclusion, this project will give many
benefits to many users especially for intranet users and important in video streaming industry.

For the next chapter, this project will discuss about the literature review and project methodology. The literature review will identify about the related technology to implement this project while the project methodology is focusing on the way and technique to achieve predetermined objectives.
CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

Literature review is a research or analysis based on related or passed research, reference, case study and other finding that should be done to identify the approaches while developing and implementing project. The ways that can be used to do literature review are comparison of case study and analysis of theoretical articles. According to University of Wisconsin, a literature review is a critical analysis of a segment of a published body of knowledge through summary, classification and comparison of prior research studies, reviews of literature and theoretical articles. It important to the one who wants to develop a system, make a research or even the one who analyze network performance. The more reviews the literature, the more knowledge they will gain.

Project methodology is an integrated task, techniques tools, roles, responsibilities and milestones used for delivering the project. Based on Jason Charvat, a methodology is a set of guidelines or principles that can be tailored and applied to specific situation. A methodology could be also be a specific approach, templates, forms and even checklists used over the project life cycle. This chapter will explain the methodology using for this project, focusing on the components that make up a solution and project milestones to measure the time frame taken for its analysis, design, testing and implementation.
2.2 Fact and Finding

Fact-finding technique is the step where one collects and gathers information related to the project. This part will explain the detail about video streaming from aspects of domain, existing system and technique. All collected information from the related thesis, journal, book and website from the internet about video streaming is important to understand.

2.2.1 Domain

The project of Video Streaming Performance Analysis situated in project scope: ICT in Advertising/Edutainment. It included ICT in Advertising/Edutainment because video streaming is part of Multimedia Networking. According to scala.com, the term multimedia describes a number of diverse technologies that allow visual and audio media to be combined in new ways for the purpose of communicating. The applications include entertainment, education and advertising. Multimedia Networking covered network that are used to provide multimedia communication services and multimedia application supported on networks.

2.2.2 Existing Research

Research is important for those who wish to analyze network performance or to get the better ideas on how to start their project or even compares their project with others.

2.2.2.1 Network Performance

According to Bitpipe.com, network performance is a measure of a network's throughput where the amount of data transferred from one place on the network to another or the amount of data processed in a specified amount of time.