

CENTRALIZED PROXY SERVER

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CENTRALIZED PROXY SERVER

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

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2015

DECLARATION

I hereby declare that this project report entitled

CENTRALIZED PROXY SERVER

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ DATE: _____

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DEDICATION

Alhamdulillah, praise to Allah. Thanks to my beloved father AHMAD SHAH RUDDEEN BIN MOHD YUNUS & my beloved mother KALSOM BINTI SHARIF. 😊

Last but not least, to my favorite lecturer and my beloved supervisor PM DR. FAIZAL BIN ABDOLLAH because trust me to do this system. 😊

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ABSTRACT

This project is about centralized proxy server. This project will be developing on FEDORA 13 operating system. A proxy server is a server that functions as an intermediary between a web browser and the Internet. Proxy servers help to improve web performance by storing a copy of frequently used web pages as a cache. For this project, functionality of proxy server that been used is blocking domain. At present, the proxy server is controlled in a decentralized system which is administrator must configure all proxy server one by one in the large network. Therefore, it will be difficult for administrators to control the entire proxy server. Objective for this project is study architecture of proxy and database server, develop centralized proxy server to block website that not beneficial and last objective is test the centralized proxy server to ensure that it has been built as needed. This centralized proxy server system will run on LINUX operating system and used squid as proxy server and MySQL for database server. With this system, network administrator only uses one server to maintain a lot of proxy server. This system will ensure saving of time, no fatal error and no human error.

ABSTRAK

Projek ini adalah mengenai pelayan proksi berpusat. Projek ini akan dibangunkan pada sistem operasi Fedora 13. Pelayan proksi adalah pelayan yang berfungsi sebagai perantara diantara pelayar web dan Internet. Pelayan proksi membantu meningkatkan prestasi web dengan menyimpan salinan laman web yang sering digunakan sebagai 'cache'. Untuk projek ini, fungsi pelayan proksi yang digunakan adalah menyekat domain. Pada masa ini, pelayan proksi dikawal dalam bentuk system tidak berpusat yang mana pentadbir mesti mengkonfigurasi semua pelayan proksi satu demi satu di dalam rangkaian yang besar. Oleh itu, ia akan menjadi sukar bagi pentadbir untuk mengawal keseluruhan pelayan proksi. Objektif projek ini adalah untuk mengkaji seni bina proksi dan pelayan pangkalan data, membangunkan pelayan proksi berpusat untuk menyekat laman web yang tidak berfaedah dan objektif terakhir adalah menguji pelayan proksi berpusat untuk memastikan ia dibina seperti yang ditetapkan. Sistem pelayan proksi berpusat akan dijalankan pada sistem operasi LINUX dan 'squid' digunakan sebagai pelayan proksi dan MySQL untuk pelayan pangkalan data. Dengan sistem ini, pentadbir rangkaian hanya menggunakan satu pelayan untuk mengekalkan kesemua pelayan proksi. Sistem ini akan memastikan penjimatan masa, tidak ada kesilapan yang teruk dan tiada kesilapan manusia.

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CHAPTER I

INTRODUCTION

1.1 Introduction

The Internet is a global network by using internet protocol suite to connect billion of computer and other device. There were 3,037,608,300 estimated internet users until December 2014 (Webopedia, 2015). Therefore, this shows that the internet is the most important things nowadays. On 2012, statistic from Malaysia Communication and Multimedia Commissions show that 18.6 million internet users, in Malaysia. Selangor has the highest users with 24.5 % and follow with Wilayah Persekutuan Kuala Lumpur with 11.5 %. States with the lowest user is Wilayah Persekutuan Labuan with 0.3 % of user. This shows that the developed states concerned with internet in everyday life. (SKMM, 2012)

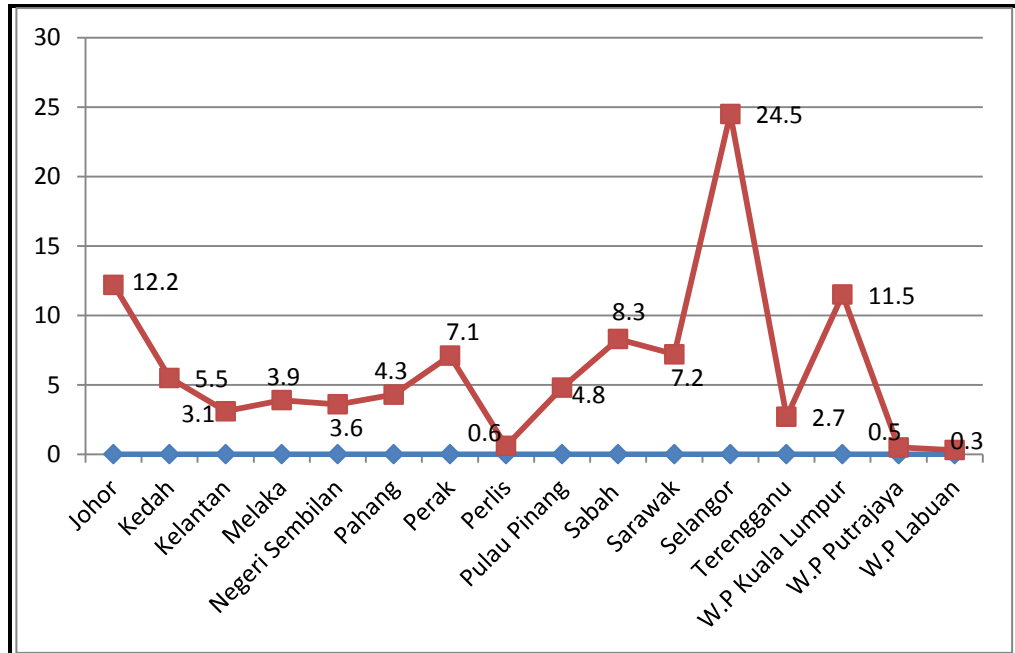


Figure 1.1: Internet usage statistics by state in 2012 (SKMM, 2012)

While the internet plays an important role in everyday life, but it still has disadvantages such as social isolation, obesity, and depression. Other than that, pornographic websites and seditious website should be blocked from access by the public. Therefore, to ensure that the website is not accessible, the proxy server must be installed by an internet service provider. This project is to ensure that proxy servers can be centralized controlled. Therefore, the proxy server at all internet service providers will be controlled by a network admin in one place

Nowadays, internet has a variety of topics especially bad topics. Therefore internet access must be controlled to ensure that that defamation is not widespread. A proxy server is a service that is most suitable for controlling user access to the internet.

A proxy server is a software system that acts as an intermediary between a web browser and server from which that device is requesting a service. Proxy server is used to facilitate security, administrative control or caching service (Margaret Rouse, 2014). In a network computing, proxy servers are used to enable user privacy and anonymous surfing.

Main focus on this project is to develop proxy server that can connect through database server. As known, proxy server will block all the website that had been configure in their configuration file. By using the database server, we can store the domain name as the blocking list. Even though inside the large network have more than one proxy server, but the entire proxy server will refer back the database server to perform their task.

1.2 Problem Statement

Proxy server is installed is to ensure that unscrupulous websites may be blocked from the surf. A proxy server is used to facilitate security, administrative control or caching service. In a network computing, proxy servers are used to enable user privacy and anonymous surfing. As known, the proxy server will block the entire website that had been configured in their configuration file. The main focus of this project is to develop proxy server that can connect through database server.

Nowadays, proxy server run in decentralized technique. Normally, each network will use a proxy server. Therefore, if the company needs to be divided by the number of departments and every department needed a network, then the company has more than one proxy server. As a network admin, it is quite difficult if you want to maintain the entire existing proxy server. Therefore, the idea to produce a centralized proxy server is very good because it can reduce the burden of a network admin. it can also ensure that all domain list can be saved in the same time . It can also make for a more orderly system, all proxy servers will follow the same blocked list.

Table1.1: Research Problem.

PS1	Problem Statement
PS1	The existing system didn't have centralized proxy server.
PS2	Difficult to maintained more than 1 proxy server.

1.3 Project Question

The connection between the proxy server and the database is still not guaranteed, hence, architecture of the proxy server and the database must be figured out. In fact, how proxy server will be implemented with database and ensure that the connection between them successfully. When implementation is done and the proxy server is already connected through the database, can it work in a variety of situations and whether it works as a centralized proxy server?

Table 1.2: Research Question.

RP	PQ	Research Question
PS1	PQ1	What is the architecture of proxy server and database server?
PS2	PQ2	How centralized proxy server connected through database can be develop?
PS2	PQ3	How can centralized proxy server be proven?

1.4 Project Objective

Based on the research question, this project will carry three main objectives. In ensuring centralized proxy server successfully implementation, architecture of the proxy server and database should be reviewed and studied. After study and collect information about proxy server and database server, implementing centralized proxy server connected through database need to be done as well. When implementation has been successful, testing and validation about the connection between the proxy server and database will be conducted.

Table 1.3: Research Objective.

PS	PQ	PO	Research Objective
PS1	PQ1	PO1	To study the architecture of proxy server.
PS2	PQ2	PO2	To develop centralized proxy server connected through database.
PS2	PQ3	PO3	To test and validate centralized proxy server.

1.5 Project Scope

This project will be covered in setting up of network with Linux host. Fedora 13 will be installed on the host for setting up the proxy server and database. The proxy server will use squid and database will use MySQL. Both services will be integrated and connected together in the network.

Mainly, this project focuses on developing centralized proxy server on Linux based host in the network. More than 1 proxy server with different host will be connected through 1 database server that domain name has been stored.

1.6 Project Significant

Table 1.4: Project Significant.

PO	PC	Research Objective	Project Significant
PO2	PC1	To develop centralized proxy server connected through database.	Develop centralized proxy server.
PO3	PC2	To test and validate centralized proxy server.	Ensure centralized proxy server develop well

Since centralized system in networking can be made much easier and administrators can set anything in one place, developing the centralized proxy server through database will help some of company or internet service provider to control their blocking website.

1.7 Project Organization

1.7.1 Introduction

Chapter 1 will tell about project background. From this chapter, problem statement, project question, project objective and scopes will be discussed in details and more specific.

1.7.2 Literature Review

Chapter 2 is about literature review of the project. In a literature review, all previous research or previous project will be reviewed. This chapter will explain the domain topic which is centralized proxy server. Other than that, this topic also describes, more on technique, software and hardware that will be used for this system.

1.7.3 Project Methodology

Project methodology will be covered in chapter 3. In this chapter, project development schedule from beginning until the project finish will be explained in details. A centralized proxy server is a software developer, therefore, the methodology is prototyping. This is because is same like to create new products. This chapter also will explain about project milestone.

1.7.4 Analysis And Design

This chapter is the biggest chapter among others. Analysis and design are held on chapter and will be cover about the current scenario of the project. It also explains all the requirements that must be used to ensure the success of this project such as data requirement, functional requirement and non-functional requirement. In design phase will describes all about project design. Its cover about system architecture of this project, the graphical user interface and database design.

1.7.5 Implementation

Chapter 5 will be expected output from a centralized proxy server. In this phase, all scripting and all development will be done. It's also explaining depth about the projects environment and implementation status. After finishing the development, this chapter will provide status of this project.

1.7.6 Testing

Testing phase is in chapter 6. Testing must be done after the implementation phase. It's to make sure all system requirements have been developed completely. In this phase, all test plans, test strategy and testing design must be created well to get better testing result.

1.7.7 Project Conclusion

As a conclusion phase, all project summarization, project contribution and project limitation will be explained. All the steps that have been made and that have been developed for this project will be listed briefly. In this last chapter also explain on additional work can be done in future.

1.8 Conclusion

The main problem of this project is currently did not have a system that's controlled more than one proxy server like centralize system. Therefore, it will difficult to network administrator to maintain all proxy servers. In conclusion, this project will ensure that centralized proxy server connected through database server can develop. The next chapter is about literature review. It will cover about method that be used from previous work.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter will cover about literature review and methodology. In a literature review, it will deepen about centralized database system. It will also answer second research question which is how centralized proxy server connected through database can be developed. At the same time will be answered, all the objectives listed. Project methodology will cover the detail explanation of methodology that is being used to make this project complete and working well. The methodology provides tools to make the project manager's job a little easier.