

Analysis Limiting Internet Sites With The Method Using Squid Proxy Server At SMKN 1 South Rawajitu

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Abstract— *SMKN 1 South Rawajitu is one of the vocational schools are housed in Tulang Bawang. Because the local computer network is the most important thing being facilities in the Department of Computer Engineering and Networks to perform activities of daily practice, then the SMKN 1 South Rawajitu give fasilitas LAB into local networks available in the CMS. But the length of Internet use, the frequent misuse, because the user is in SMKN 1 South Rawajitu, especially students at SMKN 1 South Rawajitu often do access to sites that are prohibited to be accessed when hours of lessons such as social media sites facebook and to anticipate access to porn sites or by surfing unhealthy. Solutions that can be done is to build a proxy server by utilizing the existing facilities such as open source, especially Linux debian linux, linux application, there is one application that can narrow web application that is using squid. The use Squid proxy server with linux is more efficient because in addition to assemble their own servers and make low cost, the server is also not lose performance with servers who paid a heavy price.*

Keywords— *Proxy Server, Squid, Linux Debian.*

I. INTRODUCTION

The number of Internet users primarily Information Technology today is very fast, this is caused by the increasing number of people who disseminate information through the Internet. Ranging from simple to complex information, individual and organizational information, with a wide variety of information formats (text, picture and video) (Irsyadi, 2012, p. 16). The number of users that are generally used by students is not followed by the use of the Internet wisely and in accordance with the place, so that the frequent problems associated with accessing the websites that are prohibited to be accessed by students and can distract students.

SMKN 1 South Rawajitu is one school that is housed in Tulang Bawang, because of frequent misuse of internet facilities have been provided, such as going to websites that are prohibited to be accessed in the SMKN 1 South Rawajitu. For that we need to limit the effort and do the blocking of websites such as the socialist media and sites that contain pornography. One solution that can be used for blocking sites or restriction sites is by using a proxy server and using an application that has been provided by linux is squid.

II. LITERATURE REVIEW

1. Research Journal by Yasin Al Irsyat

The development of web technology is not matched by availability of sufficient bandwidth, or bandwidth availability still requires considerable expense. The use of the cache is intended to improve access speed without additional bandwidth. Squid proxy is a software that can be used to create a cache. Squid proxy is generally only able to store web pages in the form of text and images, on the other hand Internet users prefer to access a video circulating on the internet to get the information they need. Video on FreeBSD cache, capable of storing a file-based video. Time efficiency can be obtained by comparing the time it takes to download the video before the cache on the system and the average time it takes from a few times the download after the same video files stored on the local hard drive server. Video system cache in this study were able to save time by 51.08 seconds from the time it takes before the cache, so the cache server Squid as video successfully realized in accordance with the purpose of the study (Irsyadi, 2012, p. 1).

2. Research Journal by Andi Rachman and M. Aminullah

Proxy servers are now starting to be used many companies in Indonesia. The use of a proxy server is in line with the number of companies that use information technology, one of which is the internet. Use of the Internet in many companies that used for online games, streaming video, social networking, or chat, so no matter how big the company Internet bandwidth still will not meet their needs for Internet bandwidth. Therefore, we need a management use of information technology. Proxy server is one solution that can be used, in which the proxy server is the management company will be able to limit the internet bandwidth usage, internet usage settings and reduce the attack of viruses, worms, spyware and DDOS (Distributed Denial of Service). Author internet usage reports, and sites visited by users is difficult and requires a very long time. SARG is one solution that can be utilized by the company to assist management in making the allocation of bandwidth and regulate the use of the Internet in a way that is very easy and quick. With SARG utilization, bandwidth settings, internet usage and internet usage report generation can be done 80% faster than the manual method (Andy Rachman, 2013, p. 1).

3. Research Journal by Abdul Rahman and Susan Dian Purnamasari

Computer security is an important factor in the world of information technology. Targets include computer security as protection against theft of information - data that are considered important by an organization, companies, schools, universities, organizations, and so forth. The Internet is a large and extensive network that brings a variety of existing computer networks in this earth. Inaccessibility of websites containing pornography, the absence of restrictions on access to the Internet and user settings necessary bandwidth owned sought a solution to overcome it. Use Proxy Server can save Internet access, can not access websites that contain pornography and other disturbing activities. In used Squid proxy cache server as a proxy server software that is configured as a caching proxy server. One way to maintain the security of the Internet access network is connected to the internet using Ubuntu Linux-Based Network Implementation (Rahman, 2011, p. 1).

III. METHODS

The method used in this research is descriptive qualitative method.

Descriptive qualitative method is a qualitative depiction of facts, data or material object is not a string of numbers, but an expression of language or discourse (whatever the form) through a proper and systematic interpretation (Wibowo, 2011, p. 43). Qualitative research method is a method for investigating the object that can not be measured by numbers or other measures that are inexact. Qualitative research can also be interpreted as a descriptive research and tend to use inductive analysis approach.

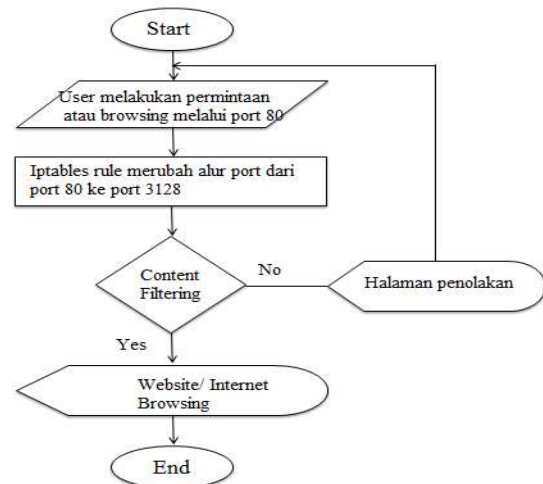
III.1 Data Collecting Method

Techniques of data collection conducted by the authors of observation, interviews and literature. Observation. Observations made by observing directly the server used, interviews were conducted to the admin server and the library is done by studying the sources associated with the proxy server such as books and journals.

III.2 Process Systems Squid Proxy

Squid is a daemon that is used as a proxy server and web cache. Squid has a wide variety of uses ranging from speeding up a web server by caching repeated requests, caching DNS, caching websites, and caching search for a group of computers in a computer network that uses the same network resource to help security by penyaringan (Filter) data traffic on the network (Son, 2007, p. 3)

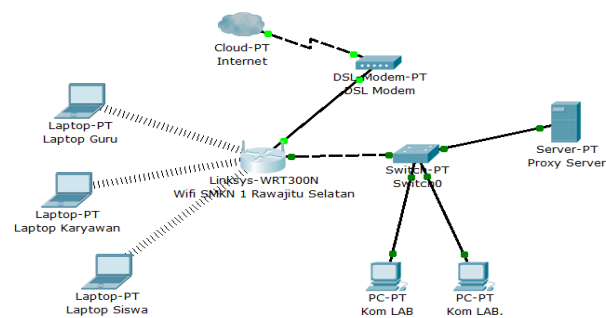
Web Restrictions carried out on a local network in SMKN 1 South Rawajitu This is a limitation with using the third option, namely content filtering. Flowchart content filtering proxy server process on the local network at SMKN 1 south Rawajitu are:



Picture 3.1 Process Systems *Content Filtering Squid proxy*

III.3 Network Infrastructure Proxy Server

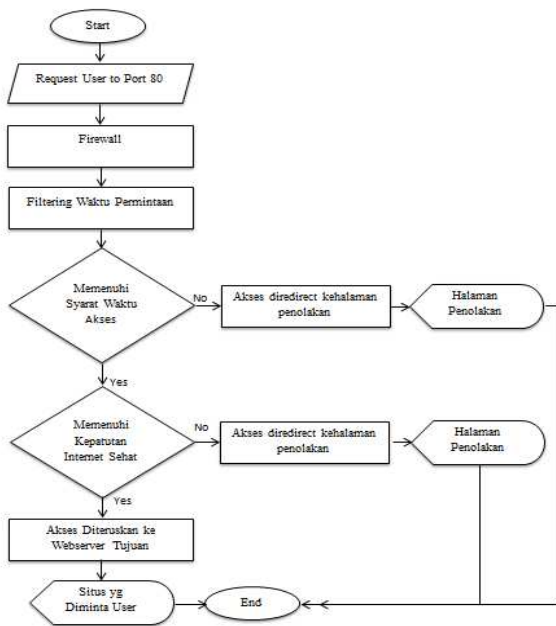
Based on observations made by the author on the local network that are in SMKN 1 South Rawajitu, the form of proxy server network infrastructure using Star Topology (Star), namely:



Picture 3.2 Network Infrastructure *proxy server*

IV. RESULTS AND DISCUSSION

IV.1 Flowchart Detail Proxy server

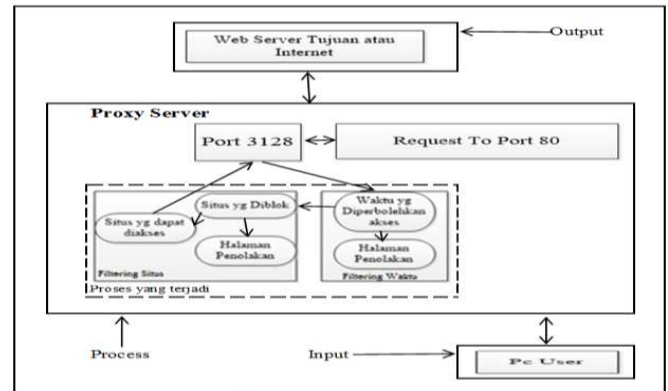


Picture 4.2 Flowchart Detail Proxy server

- Filtering will continue to run every request except social networking sites outside of school hours if it is automatically disabled by the proxy server.

IV.2 Explanation In Information System Block Diagram

In this section the author discusses the way a proxy server works in a network, the authors pack in information system block diagram. The block diagram of this information system is the Input-Process-Output as in the diagram below. To facilitate the reader in understanding the workings of the proxy server in the local network SMKN 1 South Rawajitu.

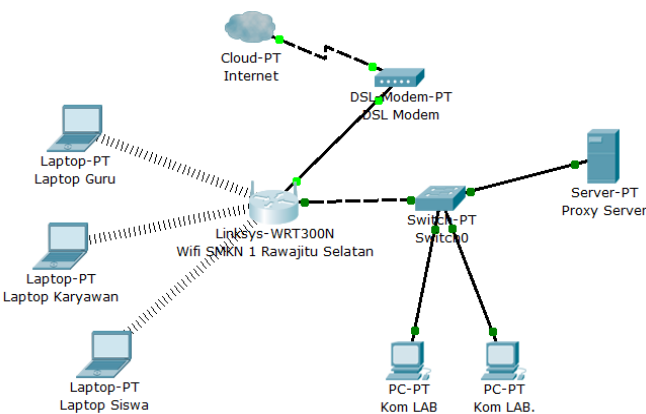


Picture 4.2 Block Diagram Proxy server

Use of the Internet in computer subjects can be negative and positive impacts. The positive impact is that students can get information and broaden the use of the internet. However, Internet users can have a negative impact if this facility is not used for educational facilities, for example, open a social networking site that is not required during school hours lasted eyes and can distract students to focus more on the site.

The main purpose of the web using a proxy server restriction is that the abuse of local Internet network in SMKN 1 South Rawajitu This can be prevented and mitigated. In barring the web using a proxy server is a linux-based application is to utilize the existing squid on debian linux and some other supporting applications to be used efficiently in terms of cost and time.

- The results can be utilized in the use of the Squid proxy is:
- Can be cached on the server to the results of any url incoming requests so as to speed in terms of internet browsing.
 - The cost of making proxy is very efficient because it can make their own homemade servers.
 - Filtering process used by the Squid proxy can by using content filtering that we are setting themselves on squid in linux.
 - Security functions that can be done is the process of filtering certain ports that can be tailored to the needs of a server that can be allowed or not.



Caption:

- Request or a request from a user to port 80 (the port internet) address of a website or a search word.
- The firewall change requests coming towards redirect port 80 to port 3128 (proxy port).
- Proxy server will filter out any source of demand, the first filtering is filtering on access time (filtering is used for filtering social networking sites), both filtering and content filtering ie whether the word in the surf meets the propriety healthy (not pornographic) and if demand can not be passed then access will be redirected to the page denial of access.

Security process on the local network at SMKN 1 South Rawajitu this is to use the process of filtering on ports that are tailored to specific policies that have been made and by the time the user requests.

1. Blok Input

In this block requests based on URL or word search performed by the user at the time of start browsing the Internet through port 80 (the Internet / World Wide Web HTTP) will be redirected or transferred at that port 3128 Squid application that has been set. All user browsing activities will be recorded in a log that can then be generated to report the squid so that all users continue browsing activity recorded in the log and it will be cached.

2. Block Process

Each request is processed by the squid in this case a website address will be stored in the cache of each website that is opened, making it possible for each request can be responded to quickly reset the user's browser. When a user make requests to port 80, the port 80 will directly transfer to the port 3128 to make the process of filtering. This filtering process is done in two ways: first screening performed by the access time of the user is filtering social networking sites, according to the policy of social networking sites can only be accessed after hours 8:00 to 12:00 pm, due to hours of lessons using a computer laboratory at SMKN 1 South Rawajitu between the hours of 08:00 to 12:00 pm. After successfully passing the time filtering user demand will difiltering based sites or word search. After all successfully passed then the user can browse the internet site in accordance with its purpose. But if the requested site is blocked automatically display blocks will appear. Filtering of websites that are prohibited to be accessed will apply to.



Gambar 4.3 Page Denied

3. Block Output

Under the control of a filtering squid then the user can only browse according to predefined rules on the Squid proxy. If there is any deviation the user will immediately be redirected to the page rejection, so that users can match the destination advice to the user function which is adapted to the existing list of filters. If the request has escaped at the time of the transfer path from port 80 to port 3128, the port user goals

will be achieved and the requested page is displayed. Any request made by the user via port 80 will always be through the same process. Below is a page request made it through the filtering process.



Picture 4.3 Page Not Denied

IV.3 Result Pre Test and Post Test

Based on the use of tissue taken before and after using the Proxy Server as limiting internet sites that exist on the local network in SMKN 1 South Rawajitu, the results of the Pre Test and Post Test of interviews with administrators in SMKN 1 South Rawajitu as follows:

Pre Test

Pre Test results are as follows:

- Students are still able to open banned websites accessed by students such as pornographic sites, gambling etc.
- At the time of study hours in progress still many students who are open social media so that the learning process is interrupted.
- Not to uncontrolled Internet usage conducted by the students so that the admin or teacher is difficult to monitor.
- If you want to shut down the network at certain times still have played a manually by the admin.
- Network used is easy to use by foreigners.
- Loading the network used in calling a site still long enough.

Post Test

Post Test results are as follows:

- Students can not open the forbidden sites accessed by students like porn sites, gambling sites, etc. as requested has been blocked by Proxy Server.
- At the time of study hours lasted students often open social media can no longer be open for hours of learning takes place when social media will be blocked automatically and will open blokirannya during recess.
- Was able to control Internet usage conducted by the students so that the teacher is in the admin or monitor.
- If you want to shut down the network at certain times can be done automatically by providing a setting in the Proxy Server.

- e. Network used is safer to use because it uses steps to secure the Proxy Server.
- f. Loading the network used in calling a website faster than before using a Proxy Server.

V.CONCLUSIONS

V.1 Conclusions

The conclusions derived from the objectives and the discussion in this paper is as follows:

1. The use of proxy servers can improve access speed compared to the web page without a proxy server.
2. More cost efficient as it can be made with minimum server specifications assemblies.
3. The blocking system has been successfully created on the local network at SMKN 1 South Rawajitu with the use of the Proxy Server.
4. Systems with Squid proxy server can filter out sites that are negative, and regulate the use of social networking time on hours of study, so as to support a healthy internet.
5. Linux is an operating system that is reliable enough to be used even for free.
6. Debian is a Linux distro that prioritizes its customers so that if debian is used as a server-level security and stability is quite high.

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