

Squid as a Transparent Proxy for High Bandwidth

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Abstract: - A proxy server is important role play in communication network. The proxy server acts as an "intermediate" for the client and the remote server. As such, the proxy server must act as both the clients and a server. All the Clients in a LAN are connected to the proxy server. Our proxy server involves different intercepting and processing of HTTP requests and replies only. The way by which the proxy server works is truly simple and straightforward.

One of the Most widely used Proxy Server are available is SQUID. Squid proxy provides specific web proxy cache services for different network protocols. Squid Proxy is most popular open-source software that brings this to us. Squid provides many of excellent features like web access controlling, bandwidth management, restriction policies, and content caching and filtering. Actually user/administrator install SQUID to pursuit two major goals: first reduce the bandwidth by content caching and second for restricting different policies access to particular contents. In advancement of squid proxy implement to transparent proxy server. A transparent proxy is also known as forced proxy server. forced proxy server can be define as a server which use a network for outgoing information on before it access the Internet at client side machine without any special arrangement on the computer. A transparent proxy server is also called a caching server but the server is configured in such a way that it completely removes the client side (browser side) configuration. The means of "Transparent" name is that any client machine which is work as clients never know about the proxy server is available or not. Corporate organizations mostly used transparent proxy servers for the client side configuration because such configuration at client side is not easy with the management of bandwidth. The main profit is reduction in the time of the communication between server and client. Finally, in growing stage of Internet Squid Transparent Proxy is very important role play in a communication network.

must take action as both a client and a server. The server to the unique client requesting data from the destination host. The proxy intercepts this request as if it was the server, and then sends this same request to the remote host computer, acting as if it were a destination host client. When the remote host sends its response, the proxy receives it as a client, and then sends it to the client as if it were the server. Proxy server also working on both operating System (Windows & Linux). We discuss only Linux based squid totally based on open source technology.

A mysterious proxy server role as a middle-man between client browser and an end server. In the working of proxy server of connecting the end server directly connect to web application, the web browser links the proxy server to end server replied by the web browser. The source and destination do not used to direct communication. Following figure is showing the role of proxy server.

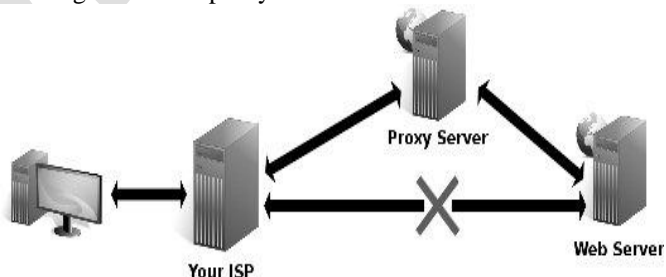


Figure 1.1: "middle-man" between browser and server.

One of common use of proxies is to access various sites which are normally restricted by upstream ISP. For example, proxies are normally used by people to access various sites which have been covered up by their companies, organizations or government body. Finally, Proxy server is very key role between two machines, a client and a server.

I. INTRODUCTION

Today the web has curved out to be a very rich medium for fast communication with high bandwidth. A proxy server is basically an intermediary forwarding station between two computers, a client and a server. Proxy Servers currently play a key role in a network by making efficient use of bandwidth through caching. Its work is fairly easy and uncomplicated any data transferred from the client machine to the proxy server is forwarded to the remote host. As such, the proxy

II. TERMINOLOGY

Client	The client machine made to connection establishes for a application program the sending request to server. There are often used to web browsers, editor's end user tools.
Server	The server machine used a application

	program that accepts connections in classify to service needs by sending back responses. Server is also decided to which request send and which is received
Origin server	The server used to given resource resides or is own created. Origin server use to given request made by proxy server which is send or received to remote host.
Proxy	A mediator program which play role as key person (a server and a client) for the reason of building requirements on behalf of other clients. Proxies are often used as client machine for sending and receiving a request.
Cache	The basic idea in caching is very simple it store file to local disk for further use.

A. Linux

Linux is UNIX based operating system which is use open source technology. It was first produced by Linus Torvalds. Linux is a multiuser multi tasking operating system. Linux is important role play in server client communication.

1). Need of Linux: - Linux is an operating system like other operating system. Now a days Linux operating system is used for commercial purpose as the application of hospitals management system, banking and in many Enterprise Resource Management (ERP) based system. Linux is an operating system which less affected by the virus. Initially the Linux is developed for the servers but after the several distributions of Linux now it is used for the desktop systems. Linux operating system is also used for squid proxy server.

B. Squid Proxy Server

Squid acts as agent, received requests from various clients (browsers) and send them to the appropriate server. Squid is a server which use for the web cache and filtering. It also used to manage bandwidth with any features like web restriction, log file management; time bound operation, dedicated bandwidths, password protection etc. Squid proxy provides specific web proxy cache services for different network protocols like other popular network protocols. Squid Proxy is most popular open-source software that brings this to us. Squid provides many of excellent features like web access controlling, bandwidth management, restriction policies, and content caching and filtering. Actually user/administrator install SQUID to pursuit two major goals: first reduce the bandwidth by content caching and second for restricting different policies access to particular contents.

C. Installation of Squid Server

The main Squid configuration file is /etc/squid/squid.conf. By-default port number 3128 is used by squid service. The default configuration file allows full access to the local

machine but denies the rest of your network. So we can test all the rules on the local host before implement in the network for other machines. We can start editing the configuration file by opening squid.conf in any text editor. For install the Linux default installer is RPM (Redhat Package Manager). The linux may also be install by using the Yellow dog Updater Modifier (YUM). User can use RPM or YUM by using the command line. It is required to install FTP before configure the YUM Server at the installation time of package. The following figure 2.1 are showing squid configuration file.

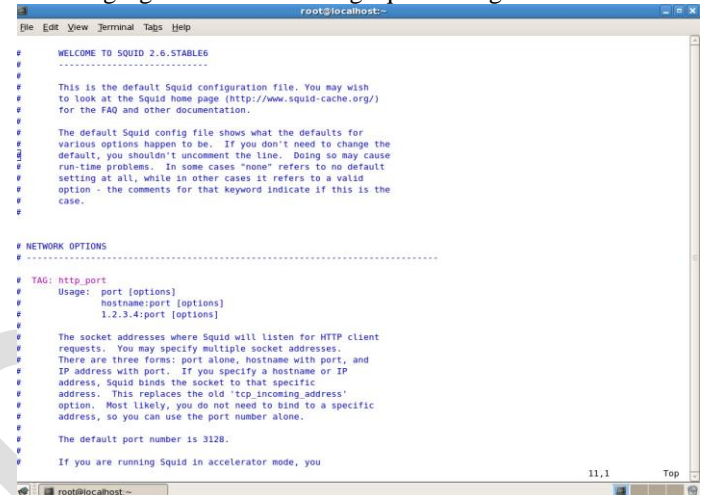


Figure 2.1: Squid Configuration file

III. TRANSPARENT PROXY

The meaning of “transparent” is anything that not visible. It means that the users not known that the presence of PROXY server. Squid Server used as Web Proxy Server for Transparent. End user clients do not know the traffic through Interception Caching which has been redirected to Transparent Proxy.

Squid can be accessed to perform transparently. Squid server select the suitable packets and cache requests. Which is solves the highest problem with caching: getting users to use the cache server.

Transparent proxies are useful for the network where filtering required for example education network. A transparent proxy requires no configuration on each client computer, so network administrators often use them as a means of saving time on individual system setups. Transparent proxies are use received to inbound and outbound request from server and send to various clients through dedicated path with dedicated bandwidth. In transparent proxy server configuration something different to squid configuration file like adding rule to IP Table, Port Configurations. In the graphically configuration transparent proxy server used to Webmin Tool. Webmin is graphically tool for all server based applications. The main disadvantages of this technique do NOT work for ssl (https).The transparent proxy server configuration is following are:

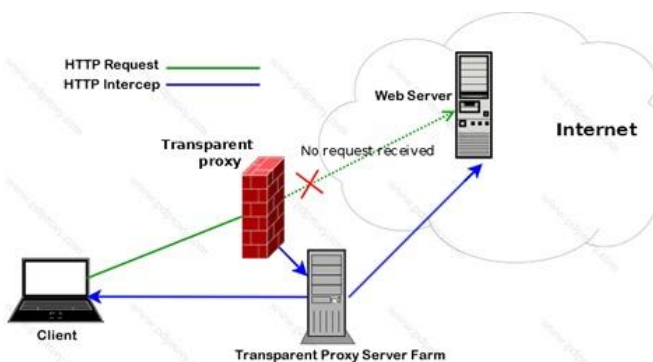


Figure 3.1: Working of Transparent Proxy Server

The three main advantages for transparent proxy is **I.** Transparent proxy doesn't browser configurations. **II.** Using the appliance as a low-cost & high bandwidth router might be sufficient for some small businesses.

A. Squid Transparent Report Generation

There are many reports analyzer are available in squid proxy server like sarg, calnav, dansaurdian etc. Its main working to calculate squid log file data in showing graphically report format in various filed like name, ip address, bytes sending, Receiving, bandwidths etc. Squid Analysis Report Generator (SARG) is a tool for the Squid proxy log analysis for Linux. It provides statistics and other information as per user requirement like time wise, byte wise etc.

SARG is an open source tool that allows we analyze the squid log files and generates beautiful reports in HTML format with information's about users, IP addresses, top accessed sites, total bandwidth usage, elapsed time, downloads, access denied websites, daily reports, weekly reports and monthly reports. SO that finally we measures highest bandwidth in our network. Following figures are shown results for measures on highest bandwidth. Following figure are shown transparent proxy are measured to highest bandwidth with low cost in different time.

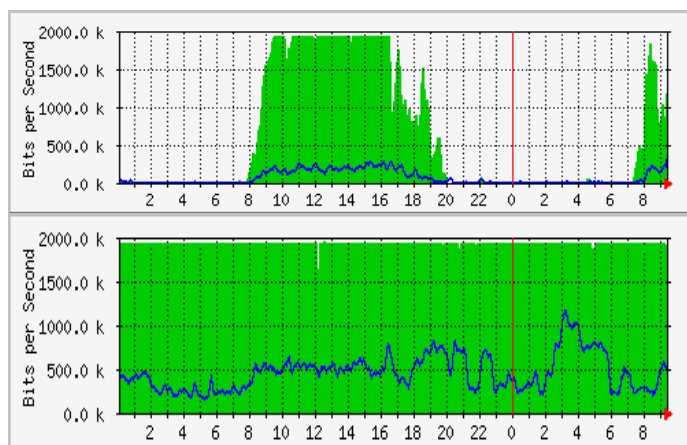


Figure 3.2: Graph for using high bandwidth

IV. SCOPE

The scope of transparent proxy is that it provides the high band width to the internet users and reduce in size in the delay of the transmission. Proxy network redirected all network traffic for this result the server performance getting better. For example, if a person accesses any web page which has already after done in the file online, while after that if he open the same file it will be earlier due to the connections of the transparent proxy. One another scope of the transparent proxy is that user can use very easily visit frequently accessed pages because the cache service is very important role play in transparent proxy server.

V. CONCLUSION

Hopefully this article explains how to use & advantages of transparent proxy server. Again, a Proxy Server is a medium in which users within the LAN can gain access to the Internet efficiently and much more securely. Transparent PROXY server offers a lot of benefits, particularly in either case that the bandwidth of Internet connection is extremely limited, or that the network administrator wants to control the Internet access by users.

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