ABSTRACT

In recent years, the wifi has attracted a significant attention, especially for Internet users, because of ease of configuration and access. But in its development , some security holes has been founded in this connection, such as spoofing or data theft, either it is personal or confidential data, manipulation of bandwidth usage, and many more.

To cover a gap of security holes on the wifi network, the solution, was built an integrated system that can handle security problems on the wifi network, including creating a system of authentication, using captive portal, which requires the user to authenticate before they can access the Internet. And as an additional security measure, and to avoid data theft and protect data that can not be seen by the user from the outside, is adding a system of ssl certificate and https authentication for captive portal system, so the data accessed by the user, can't be read by other users than the user itself. And also In addition, to avoid manipulation of bandwidth usage, is applying the bandwidth management system, to manage the bandwidth usage of each user by using the open source firewall OS, Pfsense.

Pfsense firewall OS basic concept is the operating system for firewalls that have features such as a complete commercial firewalls on the market. Pfsense, when used in conjunction with reliable hardware, the pfsense can provide almost all the features of commercial firewall, including ease of use and powerfull performance.

Keywords: Wireless, Hotspot, Authentication System, Bandwidth Management, Captive portal, SSL Certificate, HTTPS