

Reliable and security-based Myren network traffic management using open source tools

ABSTRACT

Network Security is one the main issues in each network and should be implemented based on the infrastructure design of the target network. Most of computer networks suffer from the shortage of a tight security policies. This paper is based on a practical improvement which is done in University Putra Malaysia to secure Malaysian National Research and Education Network (Myren) networks' transactions. In this improvement, layer two to layer seven of Open System Interconnection (OSI) layer are secured based on Cisco devices and open source utilities. Linux iptables package not only controls accesses from internet users to data-center servers but also controls local area network users' transactions to the data-center servers. This firewalling package protects all inside users from outside intruders' threats. Firewall packages cannot detect and prevent protocol weakness, denial of service and viruses attacks. To overcome these firewalling weaknesses, intrusion prevention system which is bases on snort package is used to improve the security of the UPM server-farm. After implementing the proposed infrastructure of Myren network, it is obvious that most of network attacks are dropped by firewalling and intrusion prevention system mechanisms.

Keyword: Linux iptables firewall; Snort Instruction Prevention System (IPS); Monitoring tool