Detection of denial of service attacks against domain name system using neural networks

ABSTRACT

In this paper we introduce an intrusion detection system for Denial of Service (DoS) attacks against Domain Name System (DNS). Our system architecture consists of two most important parts: a statistical preprocessor and a neural network classifier. The preprocessor extracts required statistical features in a shorttime frame from traffic received by the target name server. We compared three different neural networks for detecting and classifying different types of DoS attacks. The proposed system is evaluated in a simulated network and showed that the best performed neural network is a feed-forward backpropagation with an accuracy of 99%.

Keyword: Network security; Domain name system; Denial of service; Neural network