# Implementation on Honeyd: A system for analysis of network attacks

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**Abstract: Various attacks today are used by attackers to compromise the network security these days. These exploits of attacks are capable of exploiting into any secure networks. So to secure the server in network we are here combining features, functions and methodologies of IDS (Intrusion Detection System), IPS (Intrusion Prevention System) and Honeypot to make Intrusion Detection System more accurate, effective and responsive against these attacks. Honeypots are mirrored servers or host which appear as actual servers for attackers and maintain the logs of intrusions and intrusive activities. IDS detects the attack, and IPS takes actions against these attacks as configured. Intrusion detection system monitors all the data packets coming inward the network and looks for possible attempts of intrusion, when an intrusion event occurs an alarm will automatically be raised. The resulting analysis of captured packets is done and corrective measures are taken by Intrusion Prevention System if there is a necessity. This alarm will activate the Intrusion Prevention System which will take preventive measures depending on the type of attack and exploit used. Featured capturing, logging and analysis into our proposed system will enable security expert to investigate such events even more sophisticatedly.**

**Keywords:IDS, IPS & Honeypot, SQL injection,Network security.**

## I. INTRODUCTION

Numerous exploits are being used to compromise the network. These exploits are capable of breaking into any secured networks. Thus, to secure the network we are combining features, functions and methodology of IDS, IPS and Honeyed and making Intrusion Detection System more effective, accurate and responsive.

Honeyed are mirrored servers which appear as actual servers for attackers and maintain logs of intruding activities. IDS detect the attack, and IPS takes actions as configured. Intrusion detection system monitors the data packets and looks for intrusion, when such event occurs an alarm will get triggered resulting analysis of captured packets and corrective action taken by IPS if necessary. This alert will activate IPS which will take preventive actions depending on the type of attack. Featuring log analysis and capturing into our proposed system will enable security expert to investigate such events sophisticatedly. We also study the different attacks in network system this system is more secure for finding the attacker when any one tries to attempt attack on the network.

The rest of the paper is organized as follows. Section 2 reviews the related work. Section 3 application of proposed system. Section 4 gives our proposed system architecture. Finally, Section 5 concludes the paper.

## II. RELATED WORK

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Ram Kumar Singh, "Intrusion detection ssystem is using advanced Honeypots", in this paper the number and size of the Network and Internet traffic increase and the need for the intrusion detection grows in step to reduce the overhead required for the intrusion detection and diagnosis, it has made public servers increasingly vulnerable to unauthorized accesses and incursion of intrusions. In addition to maintaining low latency and poor performance for the client, filtering unauthorized accesses has become one of the major concerns of a server administrator.

Renuka Prasad, Dr Annamma Abraham and Abhas Abhinav,"Design and efficient deployment of Honeypot and Dynamic rule based live Network Intrusion collaborative system.", A Honeypot based Network Intrusion Collaboration System which is capable of generating dynamic rules during any anomalous behavior in the network or a possible intrusion is presented [7]. The NICS designed is a collection of several existing Free and OpenSource Software's

customized for the specific need that helps in implementing both preventive and detective mechanisms of network security.

"Extended honeypot framework to detect old/new cyber Attacks. " To propose an approach to detect the new malicious objects with an optimal cost. Honeypots are generally used to detect the new malicious objects. The available honeypot frameworks are too costly to be afforded by an average organization. Therefore, we are proposing a low cost honeypot framework to detect malicious objects named extended honeypot. The approach is not only cost effective but also better than other approaches in some situations such as in the Intranet which is having more than one LANs and every LAN is having double honeypot.

Atinder Pal Singh, Birinder Singh, "Design and implementation of Linux based hybrid client honeypot incorporating multilayer detection.", In current global internet cyber space, the number of targeted client side attacks are increasing that lead users to adversaries' web sites and exploit web browser vulnerabilities is increasing, therefore there is requirement of strong mechanisms to fight against these kinds of attacks [5]. In this paper, we present the design and implementation of a client honeypot which incorporate the functionality of both low and high interaction honey client solution and incorporate the multilayer detection mechanisms to fight against client side targeted attacks.

## III. APPLICATION

1. Network Decoys: The traditional role of a honeypot is that of a network decoy. Our framework can be used to instrument the unallocated addresses of a production network with virtual honeypots. Adversaries that scan the production network can potentially be confused and deterred by the virtual honeypots. In conjunction with a NIDS, the resulting network traffic may help in getting early warning of attacks.

2. Security for Control Network in Company System:
Our system can be used in a company's network for security purposes and improvement of network security.

3. Military: In Government projects, especially military networks which are always on enemy radar for attacks and spying purposes. Our system can be of use since intrusions are well detected and prevented.

4. In the research field: Knowing trends in the attacks domain & knowing one's enemies is involved here and so our system can do it efficiently.

## IV. PROPOSED SYSTEM

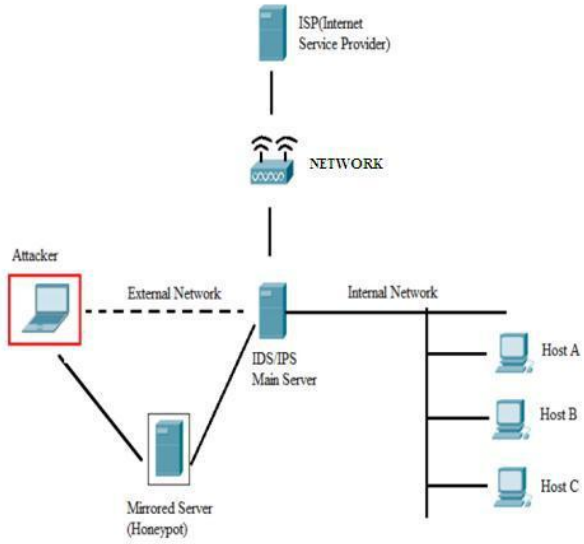


Fig 1. System architecture

In proposed system one virtual server is used to protect the multiple servers. Here complexity between the hardware is minimum. In above fig.1 one virtual server is protecting the internal severs. Also here host A, host B and host C are communicating with this server. Virtual server is working like a deceptive system. Which is protecting the multiple servers. Also it helps in detecting the attackers & hackers. It also creates the log of users. In log user IP address, time, date & MAC address are identified.

## V. SYSTEM ANALYSIS

Generate IP
Handling the user generated IP address for analyzing the further process for detecting by strong validation schemes.

Capture IP Address

- Once network connect the capture IP address
- Checking Details

Stored Packet and Reply back

- Stored packet
- Reply back to the user services

Generate log Report

- Stored log report
- Reply back to the user services

## VI. CONCLUSION

The idea behind this proposed security solution is to develop a conceptual dynamic security approach against hacking strategies and various kinds of attacks. We believe that the security of the entire Server relies on the security of the network and endpoints.

## VII. ACKNOWLEDGEMENT

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