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SELF MONITORING SYSTEM TO CATCH UNAUTHORIZED ACTIVITY

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Abstract – *Proposes a security system, named the Self Monitoring System (SMS for short) at system call level, which monitor user's activity to keep track of their usage habits as the forensic features. The SMS uses a local computational grid to detect unauthorized activity in a real-time manner The proposed work is regarded with Data Mining technique and intrusion detection mechanism. The number of hacking incidents is increases every year as new technology The system designed Self Monitoring System (SMS) that implements predefined algorithms for identifying the attacks in internal network. Therefore, during this project, a security system, named the Self Monitoring System to catch unauthorized activity, is proposed to detect insider attacks at SC level by using data processing and forensic techniques. The system can recognize a user's data processing features by analyzing the corresponding SCs to reinforce the accuracy of attack detection, and ready to port the SMS detection in shorten reaction time.*

Key Words: - System call, data mining, insider assault, intrusion detection and protection (SC).

1. INTRODUCTION

Intrusion Detection System (IDS) can detect the malicious activities performed by the Intruders and can report to the higher authorities. An Intrusion Detection System (IDS) monitors all incoming and outgoing network activity and identifies suspicious patterns that may indicate a network or system attack from attempting to break into or compromise a system.[1] An SMS works as a monitoring system activity through examining vulnerabilities in the system, the integrity of files and conducting an analysis of patterns based on already known attacks [2]. SMS is a set of methods and techniques to detect the restricted activities in System level and Network level. Intrusion Detection can be classified into two, Host Based Intrusion Detection Systems and Network Based Intrusion Detection Systems. Proposed a security system, named Self Monitoring System (SMS) at system call level, which creates personal profiles for users to monitor users activity as forensic features. The SMS uses a local computational grid to detect restricted activity in a real-time manner The proposed work is regarded with Data Mining technique and intrusion detection mechanism. The system designed Self Monitoring System (SMS) that implements Decision tree algorithms for identifying the attacks inside a network.[3] . Now a day, to safeguard the organization electronic assets, Self Monitoring System (SMS) is crucial requirement. To determine whether the activity is malicious or not Intrusion detection is a process of monitor and analyzes the activity on a device or network. It can be a software or physical appliance that monitors the restricted activity which violates organization security policies and standard security practices. To detect the restricted activity and respond in timely manner as a result risks of intrusions is diminished it continuously monitor activities. Based on the deployment.

2. MOTIVATION

In current system it is difficult to recognize who the attacker is because attack logs are often issued with forged IPs may enter a system with valid login patterns. Hence, we got motivation to develop a system which detects malicious behaviors launched towards a system at SC level.

3. LITERATURE SURVEY

Analyzing log files for postmortem intrusion detection. Authors:- K. A. Garcia, R. Monroy, L. A. Trejo, and C. MexPerera.

Upon an exploit, staff must analyze the IT system that has been compromised, so as to work out how the attacker gained access thereto, and what he did afterward. This detection usually indicates that the attacker has carried out an incursion that exploits a system flaw. in a very given logs, the execution of 1 such an exploit, if any, is incredibly valuable for computer security. this can be both because it hurries up the method of gathering evidence of the exploit, and since it helps taking measures to forestall an additional exploit, For example, for intrusion detection system maintenance, you may design and deploy an appropriate attack signature. Given the overwhelming length of the problem, as well as the difficulty of determining exactly where the exploit occurred, this challenge, which we call intrusion detection, is fairly hard. We offer an approach for intrusion detection in this study that filters out recurrent behaviour, speeding up the strategy for detecting the execution of an intrusion, if one exists. A classifier, which distinguishes normal from abnormal behavior, might be at the heart of our intrusion detection system. This classifier is created upon a way that mixes a hidden Markov model with k -means. Our experimental results establish that our method is in a very position to spot the execution of an exploit, with a cumulative detection rate of over 90that

accelerates the event of a profile for ordinary system behavior.

An Internal Intrusion Detection and Protection System by Using Data Mining and Forensic Techniques Authors:- Fang-Yie Leu, Kun-Lin Tsai, Yi-Ting Hsiao, and Chao- Tung Yang* Key Policy Attribute Based Encryption (KP-ABE) Authors:-1.Parmar Vipul Kumar 2.Victor Shoup

Description:- Currently, most computer systems use user IDs and passwords because the login patterns to authenticate users. However, many folks share their login patterns with coworkers and request these coworkers to help co-tasks, thereby making the pattern collectively of the weakest points of computer security. Insider attackers, or legitimate users that attack a system internally, are difficult to detect since most intrusion detection systems and firewalls only detect and isolate harmful activities launched from the system's outer world. Furthermore, some research suggest that examining system calls (SCs) made by commands can identify these actions, allowing for more accurate detection of attacks. Attack patterns are the characteristics of an attack. As a result, in this work, the interior Intrusion Detection and Protection System (IIDPS) is offered as a security system for detecting insider attacks at the SC level using processing and forensic approaches. The IIDPS creates user personal profiles to keep track of users' usage habits as forensic features, and compares current computer usage behavior's with patterns recorded within the account holder's personal profile to determine whether or not a legitimate login user is the account holder. The IIDPS' user identification accuracy is 94.29s, indicating that it can successfully and efficiently protect a protected system from insider threats, according to the testing data.

Title:- Bio metric Authentication Using Mouse, Gesture Dynamics. Authors :- 1.Bassam Sayed, 2.Issa Traore, 3.Isaac Woungang, and Mohammad S. Obaidat. Description:- The mouse dynamics biometric may be a behavioral biometric technology that extracts and analyzes the movement characteristics of the mouse data input device when a mortal interacts with a graphical program for identification purposes. The majority of current mouse dynamics analysis studies have focused on continuous authentication or user re-Authentication, which has yielded encouraging results. Static authentication (at login time) using mouse dynamics, on the other hand, looks to have some difficulties due to the restricted quantity of information available. may reasonably be captured during such a process. We introduce a new mouse dynamics analysis methodology that employs mouse gesture dynamics for static authentication in this paper. A learning vector quantization neural network classifier is used to assess the captured gestures. With 39 users, we conduct an experimental evaluation of our framework, achieving a false acceptance ratio of 5.26 and a false rejection ratio of 4.59.

4. PROBLEM STATEMENT

Security has been one of the serious problems in the computer domain since attackers very usually try to penetrate computer systems and be- have maliciously to authenticate users. To solve this issue, we propose a security system, named Self Monitoring System(SMS), which detects malicious behaviors launched toward a system.

5. EXSISTING SYSTEM

Several information security techniques are available today to protect information systems against unauthorized use, duplication, alteration, destruction and virus attacks The main purpose of a firewall is to prevent unauthorized access between networks.

6. PROPOSED SYSTEM

Accuracy of detecting suspicious user is efficient than existing system IDS is used to determine the intrusion. We can monitor which activities are performed by user. So that we can recover all the modified logs. By using web cam system take photograph of user which performs malicious activities and save that activity in folder and send that activity log and image of user on client's email id. So that we know this attacker. So that our system is very effective and efficient for detecting malicious activity in system.

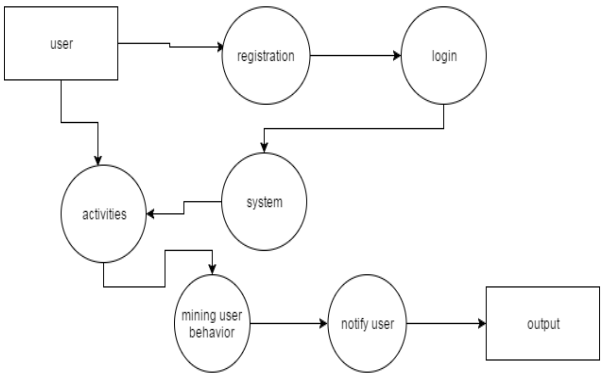

Fig. Data Flow.

7. ALGORITHM

Decision Tree could be a Supervised learning technique that may be used for both classification and Regression problems, but mostly it's preferred for solving Classification problems. It's a tree-structured classifier, where internal nodes represent the features of a dataset, branches represent the choice rules and every leaf node represents the result.

In a Decision tree, there are two nodes, which are the choice Node and Leaf Node. Choice nodes are wont to make any decision and have multiple branches, whereas Leaf nodes are the output of these decisions and don't contain any more branches.

8. FUTURE WORK

The future work of internal attack detection research will be about monitoring the real data in order to study general solutions and models. It is hard to monitor data from normal users in many different environments or traitor while performing their malicious actions.

9. CONCLUSIONS

The SMS (Self Monitoring System) employs data mining and forensic techniques to identify the user behavioral patterns for a user. The time that a habitual malicious activity appears in the user's log file is counted, the most commonly used patterns are filtered out, and then a user's profile is established. By identifying a user's behavior patterns as his/her computer usage habits from the user's current input, the SMS resists suspected attackers. The future work of internal attack detection research will be about monitoring the real data in order to study general solutions and models. It is hard to monitor data from normal users in many different environments or traitor while performing their malicious actions. Even if such data were available, it is more likely to be out of reach and controlled under the rules of evidence, rather than being source of valuable information for research purposes.

10. REFERENCES

[1] C. Yue and H. Wang, Bogus Biter: A transparent protection against phishing attacks, ACM Trans. Int. Technol., vol. 10, no. 2, pp. 131, May 2010.

[2] Q. Chen, S. Abdelwahed, and A. Erradi, A model-based approach to self-protection in comp

[3] H. Lu, B. Zhao, X. Wang, and J. Su, DifiSig: Resource differentiation based malware behav

[4] Z. Shan, X.Wang, T. Chiueh2, and X. In Proc. ACM Int. Conf. Autonomic Compute., Karlsruhe, Germany, 2011, Meng3, Safe side effects commitment for OS-level virtualization, pp. 111120

[5] J. Choi, C. Choi, B. Ko, D. Choi, and P. Kim, Detecting web-based DDoS attacks in a cloud computing context using MapReduce processes, J.Internet Serv. Inf. Security, vol. 3, no. 3/4, pp. 2837, Nov. 2013.

[6] Q. Wang, L. Vu, K. Nahrstedt, and Malicious nodes identification approach in network-coding-based peer-to-peer streaming, H. Khurana, MIS

[7] Detecting distributed node exhaustion attacks in wireless sensor networks using pattern recognition, Z. A. Baig, Comput. Commun., vol. 34, no. 3, pp. 468484, Mar.2011.

[8] Junho Choi, Chang Choi, Byeongkyu Ko, Dongjin Choi, and Pankoo Choi, Using RADISH: A System for Real-Time Anomaly Detection in Heterogeneous Data Streams to Detect Insider Threats Vol. 34, no. 3, pp. Kim 468484 Mar. 2015

[9] Sealed Cloud - a novel approach to defend insider attacks vol. 3, no. 3/4, pp. 2837, Nov. 2013.