Minor Project- Report

Aug-2021-2022

Course Faculty: SWAPNA MAM Course Name & code: Computer Networks Semester: 5 Date:

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| TITLE OF THE PROJECT | **Intrusion Detection System** | | | |
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| INDIVIDUAL  CONTRIBUTION |  |  |  |  |
| GUIDE | **SWAPNA MAM** | | | |
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| PROJECT ABSTRACT : | Intrusion Detection System is a software or a device that can monitor all the suspicious activities in the network or that activities that violates its policy.  IDS is very popular system to protect the networks from different types of attacks. Any intrusion activity or violation is reported or informed either to administrator or this information can be centrally collected in a system called SIEM (Security Information and Event Management). It collects and combine information from different sources and it uses alarm filtering techniques.  There are two most common types of IDS - (NIDS) Network based Intrusion detection system and (HIDS) Host based Intrusion detection system.  HIDS is used for monitoring important operating system files and NIDS are used to analyze incoming network traffic. Here's how IDS work, IDS when placed at a strategic point or points within a network to monitor traffic to and from all devices on the network, an IDS will perform an analysis of passing traffic, and match the traffic that is passed on the subnets to the library of known attacks. Once an attack is identified, or abnormal behaviour is sensed, the alert can be sent to the administrator.  Modern networked business environments require a high level of security to ensure safe and trusted communication of information between various organizations.  An intrusion detection system acts as an adaptable safeguard technology for system security after traditional technologies fail. Cyber-attacks will only become more sophisticated, so it is important that protection technologies adapt along with their threats. | | | |
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| Introduction | An IDS is basically a software or device that is categorised into two common parts one is NID i.e. Network Intrusion Detection and second is HID i.e. Host Intrusion Detection. The work of both the NID & HID is same but their level is different. But IDS are categorised into 5 types - NIDS, HIDS, PIDS, Hybrid IDS & APIDS. Work is same to detect intrusions but they are used at different levels.    In the Figure we are now clear that where HIDSS are used and where NIDSS are used.  In this project we have implemented Intrusion Detection System by creating 3 different networks as in Figure 2. Implementing the IDS is very challenging task as it needs the implementor to have proper knowledge with prior knowledge with some common and special network devices and ethernet cables. One have to know that how to deal with the CLI i.e. Command Line Interface. As we are performing this project on Cisco Packet Tracer – the best available simulation tool which allows users to see the working of network in real time.  A layout of the network should be made prior to the implementation of IDS as we are implementing NIDS. There are various parameters which are to be kept in mind while We designed network and configure IDS. Here are some 'can's and can not's about the IDS.  - CAN recognize and report alterations to data.  - CAN detect when your system is under attack.  - CAN detect errors in your system configuration.  - CAN NOT analyse all the traffic on a busy network.  - CAN NOT prevent system from that attack which it detects.  - CAN NOT deal with some of the modern network hardware and features. | | | |
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| Design |  | | | |
| PLATFORM USED  (H/W & S/w tools to be used | **CISCO PACKET TRACER** | | | |
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| Project Source Code Link (Github/ Google DRive) | ***https://github.com/XitizVerma/Intrusion-Detection-System*** | | | |
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| Conclusion /FUTURE ENHANCEMENT |  | | | |
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| Ui sCreenshots |  | | | |