

A STUDY ON SECURITY MEASURES AND THREATS IN BIG DATA AND A SURVEY ON THE CURRENT RESEARCH CHALLENGES

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Abstract: Nowadays the technology plays an important role in our daily life also it has become the most inevitable part of our life. As technology is growing faster and faster the threat to the security of the nodes or the components involved in the network is also going for a toss. Security and secure transmission of data and information is the most challengeable task for any researchers who choose to find the most secure way of data transmission. That is the reason they say the most evergreen problem in any field is security. As the context of security implies that the data or the components or the nodes who are involved in a network must be securely safeguarded from any types of attacks and threats and they must be in turn trained to identify that if there are any compromised nodes are there in their network. In this paper we are going to do a study on the risks that are involved when working with voluminous amount of data and a survey on various types of threats and attack and the security measures that can be implemented to overcome the threats and attacks in big data environment.

breach and exploit the resources. Many researchers have been undertaken to identify the type of threat that exist in the environment of a network. They are broadly classified based on the negative impact that they create on a system. They are classified as:

1. Introduction

1.1 Threats and attacks

As the name implies threat can be defined as a possibility of a network or an system to be exposed or undergo any sort of negative impact or negative event whereas attack is an act of identifying an vulnerability in a system and exploiting the resources that are used in the system. An component or administrator of a system is always aware of the threat that can be imposed or it is there in a system but attack is known to the nodes of a system after a negative impact has occurred or compromised.

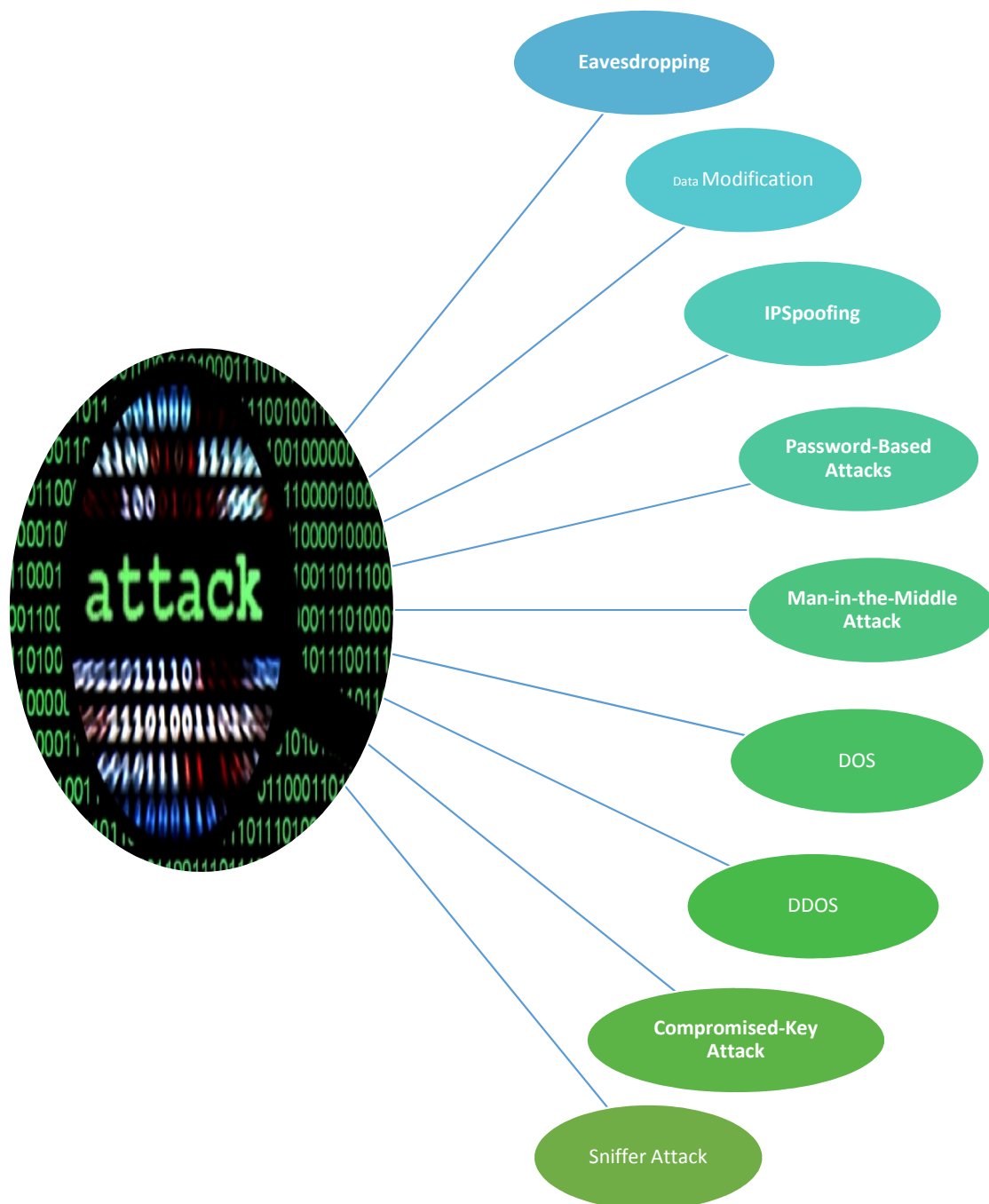
1.2 Types of threats

There are nearly many types of threats that are constantly imposing problem to the software or the network system or to the computer security. They can be highly risky giving a very high potential of attack to the attackers. They maintain the pattern of life of the system or network and hence they identify the security



Figure 1. Different types of Threats

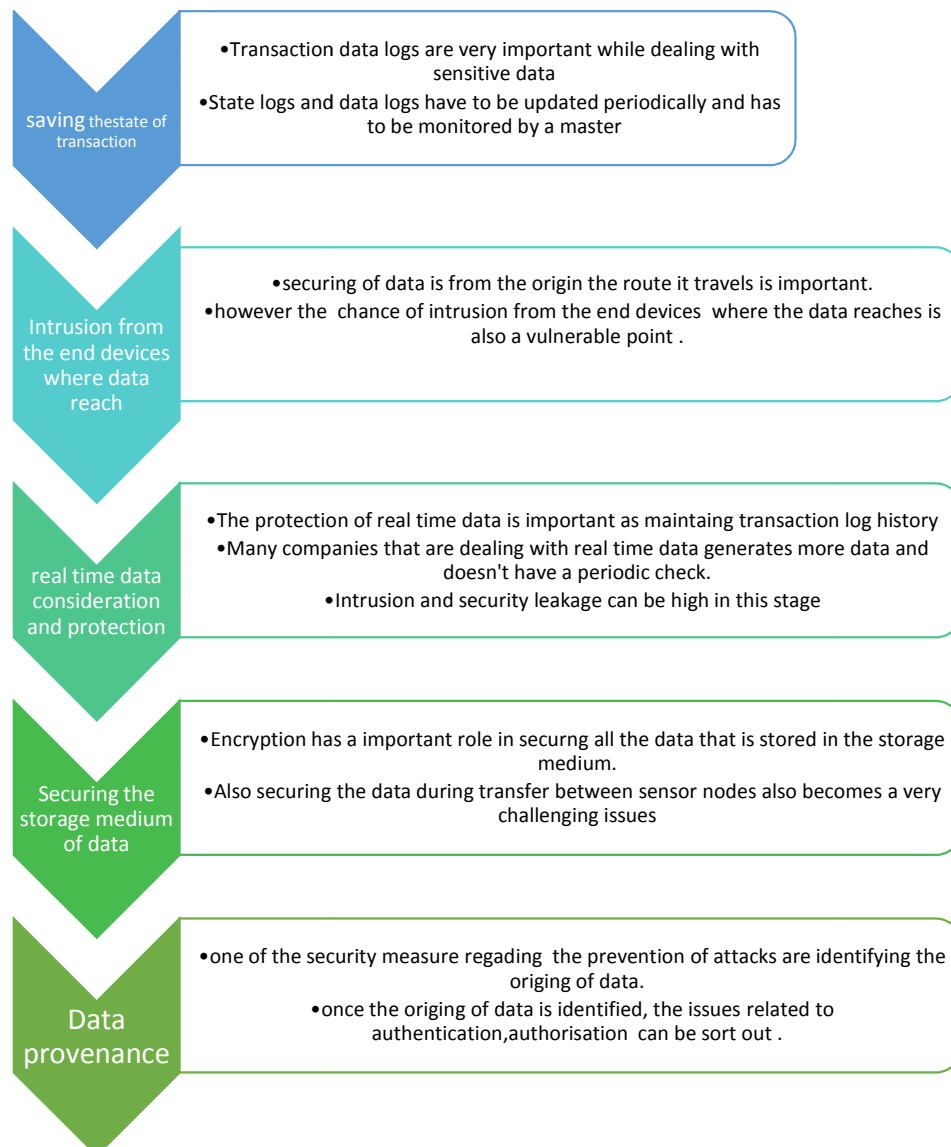
1.3 Attack and its types



2. Challenging Issues in Big Data

As the names suggest big data deals with large number of static and dynamic data. As a storage medium enormous techniques related to data analytics and

segregation will be applied. In this scenario a best and most efficient technique of privacy has to be applied in big data. There are some of the challenging issues in big data like



3. Research Challenges in Big Data

3.1 Saving the state of transaction

The transaction log is an very important attribute of a data which is dealing with large amount of data. The system which deals with large amount of data must be highly robust and must recover from any sort of failure. The importance of undo logs and redo logs play an important role in case of system that generate huge amount of data. The system will be able to recover from the failure and attain its previous stage by means of updating the undo and redo logs. But still more researches are going on in securing the state of

transaction. The most preferable means of securing the logs is through using Master-slave model

3.2 Intrusion from the end devices where data reach

Security measures is usually concentrated on the place where the data is generated and the medium of storage and in the network connection. More security measures and implementation of cryptography techniques are accomplished in the network connection area. The mode of securing the LAN, Network have been implemented in many ways. But securing the end devices where the destination of the data resides also has to be considered as far as security is considered.

3.3 Real Time Data Consideration and Protection

The large number of threats and attacks are possible for the system which generates large number of real time data. The system must actively monitor the real time data and ensure proper security measures be applied to the system, to protect the data. These systems are easily vulnerable to attacks like DOS and DDOS, though many security measures are established, there are some security leaks for such systems.

3.4 Securing the Storage Medium

Cloud is one of the most important storage medium of data as far as big data is considered. Also encryption of data that is present in the cloud is already available. Internet of Things is an very smart environment where huge amount of sensor data has to be stored in the storage medium. This point is a very vulnerable spot of different types of attacks and threats. Data from the sensor nodes are collected and they are directed to different sensors and to the storage medium. Hence , many researches are going on in the area of securing the storage medium which also involves storing of many real time information.

4. Conclusion

After surveying many papers and in the motive of helping the researchers who are pursuing their research in the area of Big data, certain ideas where still more researches has to be concentrated is given in this paper.

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