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A Systematic Survey on Various Distributed Denial of Service (DDoS) Attacks in Wireless Sensor Networks (WSN)

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Abstract

Document Sections

I. Introduction

II. Wireless Sensor
    Networks (WSN)

III. Distributed Denial-Of-
    Service (DDoS) Attack –
    Architecture and
    Classification

IV. Related Work on DDoS
    Attacks in WSN

V. Results and Discussion

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Authors

Figures

References

Keywords

Metrics

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Abstract:

Abstract: In this digital era, Wireless Sensor Networks (WSN) are the most popular technological trends and are already a leading technology used for mission carried out in remote areas and also for future applications. Because WSN are broadcast, the wireless air interface is open and available to all types of users, posing several unique security difficulties for researchers. A Distributed Denial of Service attack (DDoS) is a network attack in which a victim involving many machines is dispersed across multiple and independent networks. The stream of incoming messages effectively pushes the target system to shut down, denying authorized users access to the system. WSN nodes are vulnerable to various attacks, which includes Black hole, Denial of service (DoS), and DDoS attacks, all of which are discussed in this paper. A DDoS attack is a significant security threat in today's communications networks. New methodologies for determining system vulnerabilities have been implemented as new vulnerabilities have been discovered. Much research hasn't been done on DDoS in the WSN; a review of DDoS attacks is being conducted to demonstrate their impact on networks. DDoS attacks can have significant effects, especially for businesses that rely on the internet for their operations. The purpose of the study is to know about the various impact of DDoS attacks and this paper also elaborately discusses different types of DDoS attacks in WSN for other researchers to know attacks caused due to DDoS in different layers.

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☰ Contents

I. Introduction

In WSN attacks, the distinction is that a single node carries out a DoS attack, but a DDoS attack is carried out by a group of nodes [1]. By delivering huge packets, all nodes assault the target node or network at the same time, completely consuming the victim's bandwidth and preventing the victim from receiving crucial data from the network. In a DDoS attack, the accumulation of data traffic to attack can be massive compared to the victim's resources. Victims could significantly reduce or discontinue services due to attacks and provide all kinds of services. Unlike traditional DoS attacks [2] carried out by a more secure service system or preventing DDoS assaults is more hard and difficult when there is unwanted remote or local access.

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