DENIAL OF SERVICE ATTACK (DOS ATTACK)

Kamini[1] (MCA 2nd year), Mr. Deepak Kumar[2]

[1]*College of Computing Sciences and Information Technology.Theerthanker Mahaveer University Moradabad.*

[2]*(Assistant Professor) CCSIT (TMU Moradabad)*

[1]sbhartikamini177kb@gmail.com

[2]deepak.computers@tmu.ac.in

Abstract:**-We all are living in the age of science and technology .As these all are increasing, threats related to them are also increasing one of threat is dos attack. DOS attack or distributed denial of service attack (DDOS attack) is an attempt to make a computer resource unavailable to its all users. While the means to carry out, motives for, and targets of a DOS attack may differ, it generally consists of the serious efforts of a person or people to prevent an Internet site or service from running powerfully or at all, briefly or indefinitely. Botnet is used to perform dos attack .This paper is a short summary of what is dos attack and how it works.**

Keyword:-We need to be ready all the time for Attacks.

I. INTRODUCTION

Today, we are using wireless networks so the security related them has rapidly decreased. In present, Dos attack is a rapid growing attack for computers. As Dos attack was first discovered in 2000 but in a very less time period it has grown wide.

A Denial of Service attack is an attempt by a person or a group of persons to attack on online service. This can have serious cost, especially for companies like flipcart and eBay which rely on their online availability to do business. Previous single source attacks are currently countered simply by several defence mechanisms and therefore the source of those attacks will be simply rejected or blocked with improved tracing Capabilities .The use of Internet is growing faster so the quantity of weak systems is also increasing which will leads to insecurities.

Under DDOS attack, attackers take a large number of weak machines over the network under his control to use them as zombies. The attacker exploits these computers weaknesses by inserting malicious code or some other hacking technique so that the machines become under his control. The compromised machines which are used by these attackers can be hundreds or thousands in numbers and these are known as 'zombies'. The group of zombies are called 'botnet'. The magnitude of attack is depends on the size of botnet, for larger botnet, attack is more vicious and vain.

Zombies of a botnet are usually recruited through the use of Trojan horses, worms, or backdoors. The attacker uses spoofed IP addresses, so that the defence mechanism fails in identification of them.

Earlier DDOS attacks were launched by manually, in which attacker had to implement many steps before the launch of final attack, which includes port scanning, identifying compromised machines or zombies in the internet to

II. WHAT IS A DOS ATTACK

A denial-of-service attack is famous by an open attempt by attackers to prevent rightful users of a service from using that service. Denial of service attack is a form of cybercrime in which attackers overload computing or network resources with so much traffic that legitimate users are unable to gain access to those resources.

III. RISK ASSOCIATED TO DOS ATTACK

In denial of service attack a hacker wants to crash our server following are the risk related to it-

- Network bandwidth.
- Server memory.
- CPU usage.
- Hard disk space.
- Database space.
- Application exception handling mechanism
- Database connection pool.

A denial of service attack is an action that prevents or spoils the allowed use of network, system or applications by killing resources such as central processing unit (CPU). Denial-of-service attacks are considered violations of the IAB's

Internet proper use policy, and also violate the acceptable use policies of virtually all Internet service providers

IV. AIMS OF DOS ATTACK

following are the aims of dos attack:

- Using more and more bandwidth by sending heavy traffic.
- The attacker tries to crash the network handling software by overloading it.
- In this attack an intruder uses to send some specific packets to use limited available resources.

V. PREVENTION FROM DOS ATTACK

We can prevent from dos attack by the following practices:-

- Always try to test yourself both locally and over the internet.
- Our processes can also be harmful for us.
- If u feel like something is wrong then ask why?
- Protects yourself against hackers.
- It is important to know your configurations.
- Try to Create (SOPs) and (EOPs).

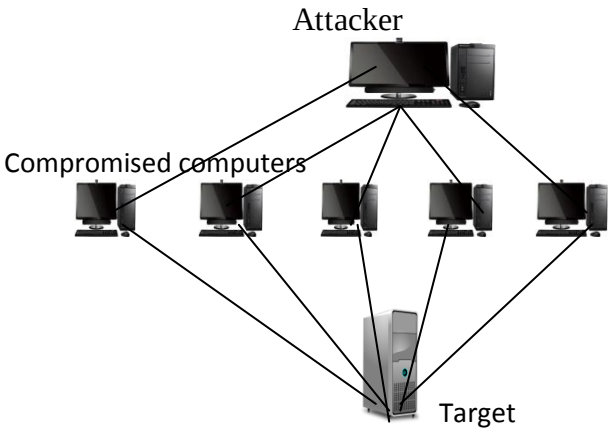

Fig.1 (DOS ATTACK)

VI. WHAT IS DISTRIBUTED DENIAL OF SERVICE ATTACK (DDOS ATTACK)?

A DDOS Attack organizes many machines to get this goal. If an operating system developed without using securities and protocols than it will lead to insecurities on Internet. These insecure machines are used by attackers as their crowd to launch attack. These insecure machines are used by the attackers or hackers for adding malicious programs to these machines.

A Distributed Denial of service attack in common can be defined as an event in which a valid user or organization is rundown of certain services, like web, email or network connectivity, that they would normally expect to have. DDOS is a problem in which bandwidth, memory, CPU cycles, file descriptors, buffers resource etc are overloaded so that for some time these resource cannot be available for valid users. The attackers or hackers shower scare resource by sending flood of packets or a single logic packet which can activate a series of processes to exhaust the limited resource. The figure shows that attacker uses three slaves' computers to generate high volume of malicious traffic to flood the victim over the Internet thus rendering legitimate user unable to access the service.

VII. HOW DDOS ATTACKS ARE IMPLEMENTS OR GENERATED?

A DDOS attack can be take place in many phases. First thing attackers do is they collects multiple agent machines .This process is usually performed automatically through scanning of remote machines, looking for security holes that will enable subversion. When they discovered vulnerability then they use these vulnerable tools to exploit recruited machines and infect them with the attack code.

The infect point is frequently automated, and the infected machines can be used for further recruitment of new agents. Another infect strategy consists of distributing attack software under disguise of a useful application (these software copies are called Trojans). The above plan can be

take place by distributing or sending E-mail messages with infected attachments. The Subdivided agent machines are used to send the attack packets. Commonly attackers used to hide their identity over the network through spoofing of the source address field in attack packets.

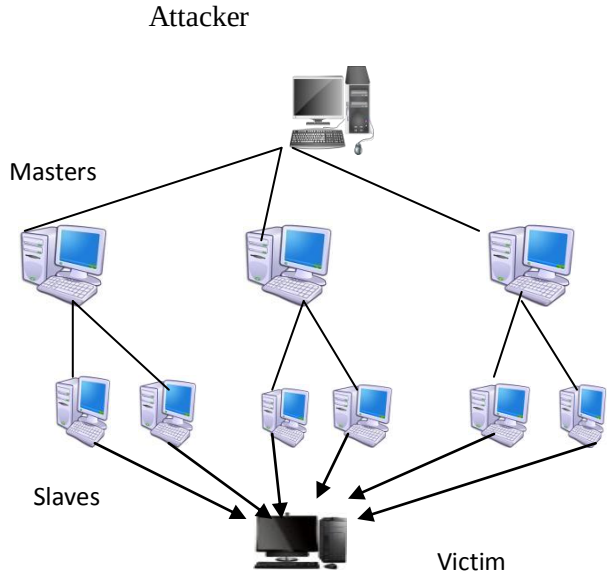

Fig 2(DDOs Attack)

VIII. TYPES OF DDOS ATTACK

A. *SYN flood attack:* - A network having TCP-based services is potentially subject to SYN flood attack. The attackers use half-open connections to cause the server exhaust its resource to keep the information describing all pending connections. In result the system can be crashed or broken.

B. *DNS request attack:* - If a server is receiving UDP based DNS requests than it must be in under of a DNS request attack of UDP-based DNS requests to a name server using a spoofed source IP address. Then the name server, acting as an intermediate party in the attack, responds by sending back to the spoofed IP address as the victim destination. Because of the amplification effect of DNS response, it can cause serious bandwidth attack.

C. *Mail bomb attack:* - In this attack the attacker sends a vast amount of mails at a time to a specific user or a system. A huge amount of mail may simply fill up the recipient's disk space on the server or, in some cases, may be too much for a server to handle and may cause the server to stop working. The mail bomb attack is also known as the flood attack.

IX. HOW TO PREVENT FROM DDOS ATTACK

D. It is very tough to protect against a complicated DDOS attack launched by a gritty enemy. Dos attack can be prevent by the use of dot defender web application firewall. As dot defender inspects HTTP traffic and every packet .Following are the reasons for why dot defender is good for security of network-

E. ISP provides Internet access .With the coordination and help of ISP Internet Service Provider (ISP) the DDOS attack can be stopped .If once an organization struck by a DDOS attack than it can be stopped by the help of ISP. This is especially true when an ISP is forced to "null route" a victim – meaning that to protect other customers, the ISP routes traffic intended for the victim into the trash. By this technique we can prevent all access including valid users. SYN cookies are used against SYN flood. SYN cookies can be used at server OS or it is better for network efficiency. SYN cookies also used as a method of tracking incoming TCP connections. These DDOS defences are not enough. If the attacker can generate network traffic at a higher rate than your network's Internet connection can handle it.

X. CONCLUSION

F. In present scenario internet reforms itself rapidly so the launching of new websites caused advanced in insecurities. Dos attack can be costly and harmful attack. The top defence is to hinder. We can say that daily we saw new services which are offered through the Internet. By launching these services new attacks are also deployed to prevent clients from accessing these services. Still a question arises that, DDOS is a network problem or an individual problem or both. If attackers are only

the network problem than a plan for it must be setup through Internet protocols. If attacks are mostly the result of individual system weaknesses, then the solution for this could derive from a successful IDS system, from an antivirus, or from an unassailable firewall. So that attackers then could not compromise systems to use them as "zombies" army.

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