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Identify the Attacked Information from the Spoofers by using Passive IP Traceback (PIT) Method

Madhurakshi .B .S[1], Mahesan .K .V[2]
M.Tech Student[1], Associate Professor[2]
Department of Telecommunication
Dr. Ambedkar Institute of Technology, Bengaluru, Karnataka, India

Abstract:
In Today's digital life where remote area is also enjoying network facility, providing network security to all corner of the world is challenging. The door of network is often knocked by one or other type of attack. One such attack is IP Spoofing where the attacker conceals their original address with the forged IP address and sends malicious data to some other node (victim). The intention of Spoofing activity many a times comes with efficient utilization of network resource as seen in DoS and DDoS attack. In this paper, we focus on bringing the counter measure to IP Spoofing attack. To capture Spoofers, many IP traceback mechanisms we have used passive IP Traceback (PIT) method. PIT investigates Internet Control Message Protocol (named path backscatter) that are trigged by Spoofing traffic, and tracks the Spoofers based on public available information. We study the path backscatter and analyze which node is causing this attack and discard that from the network.

Keywords: IP Spoofing, Backscatter, Passive IP Traceback (PIT) method.

I. INTRODUCTION

Today's internet infrastructure is vulnerable to motivated and well-equipped attackers. Much work is being done to safeguard resources, detect an attack and if possible, attempt to thwart the attack. Network security is to provide protection to underlying network infrastructure from unauthorized access, misuse, malfunction, modification, destruction or improper disclosure. It is more difficult to determine the origin of an attack. IP Spoofing is one such attack where the attacker conceals their original address to some other IP address [1]. There are many notorious attacks that reply on IP Spoofing those can be named as SYN flooding, DNS amplification, SMURF, Man in Middle, DoS and DDoS. First step in locating the attack point is blocking attack and indentifying party the one cause the attack [5]. One of the legend examples for the DoS attack that happened in February 2000, California where the attackers took control on incapacitated several high-visibility Internet e-commerce sites, including EBay, Yahoo and E*TRADE [6]. Looking at victim side victims are present globally (as like attackers) from small commercial sites, public chat severs education institution and government organization. Determination of the origin of IP Spooing traffic is very important because as long as real locations of Spoofers is not known then to take further actions in order to stop that activity is difficult and also the impact of attack. Even just approaching the spoofers at the Autonomous System (AS) level or network level where they reside, attackers can located in a smaller area, ny placing filters close to attacker one can stop attacker before attacking traffic get aggregated. This Spoofing activity is not new to internet world there from more decades. In order to subtle this activity many protocols have been introduced, devices like Internet Service Providers (ISPs) have changed according to need and a database has been created. The protocols many listed as Routing Information Protocol (RIP) which collects the information's such as the number packets logged in and out their traversal details, Border Gateway Protocol (BGP) invented for the same purpose as like RIP. Filters used at the routers Bloom Filter which is a probabilistic data structure used to test whether an element is a member of a set. Packet that carries information from source to destination will have their address along with them. Spoofers in the source field of data packet rewrites the forged IP address to launch Spoofing attack. Hence packets that traverse at routers should taken care before providing permission to cross the Border this place where Routing Protocols comes in to picture and better filter used at router determine the packet jejuna to grant permission. Researchers show that the packet with probability 0.25% pass through filters without being noticed [9]. The other factor is the distance from attacker to victim, if distance is more, then probability of finding the location of attacker becomes difficult. The process to indentify the machines that directly generate attack packets and the network paths these packets follow is called the traceback problem [7]. Traceback is typically performed manually and recursively repeated at the upstream router until the originating host is reached [11].if the taceback is at IP level then it is IP traceback, various mechanisms have been proposed till now.

II.PERVIOUS WORK ON IP TRACEBACK

In this section we discuss an overview of IP traceback mechanisms and Requirements for IP traceback mechanisms.

A. Overview of IP Traceback

The trusty nature of IP protocol makes the source address unauthenticated which results in IP packet being falsified (IP address Spoofing) [23]. The intent of IP taceback is to locate the

source origin of that packet. The list below shows different IP mechanisms, if few mechanisms use packet marking in which a special bit dedicated to hold the path traced by them. In few other mechanisms show that use of hop count to attacker location where the hop counts are nothing but the count of the routers that a packet traversed to reach victim. In few techniques use filters to remove such attacked packet. Usually there is a tradeoff router overhead, packet header overhead and per packet state. A report from the ICANN Security and stability Advisory Committee (SSAC) shows the DNS Distributed Denial os Service (DDoS) attacks that are continuously observed during February 2006 [2].
Probabilistic Packet Marking (PPM) is used to traceback source address. They have used edge sampling, edge data is communicated in half the space by sending the XOR of two nodes (sender and the next nearest node). To traceback the location reverse logic is applied [4]. Snoeren et al propose SPIE for IP traceback. The advantage of SPIE is that it enables a victim to trace by using a single packet which is queried at router state of upstream routers [5]. Dawn Xiaodong Song et al proposed Advanced and Authenticated marking schemes for IP traceback. In advanced marking scheme 32 bits of header information is divided two 16 bits where 5bits are dedicated to distance and 11 bits for edge information. It uses two hash codes h and h'. The XOR of two neighboring routers encode the edge between the two routers of the upstream router map. The victim can use this route map to traceback source address. In Authenticated scheme, the routers are authenticated. This technique use very low network and router overhead [8]. Abraham Yaar et al proposed Fast Internet Traceback (FIT) to subtle IP Spoofing and DoS attack. FIT improves IP traceback with these three dimensions: (1) victim can be able to recognize attack with just ten packets received. (2)FIT – enabled router in trace path is indentified in presence of legal router. (3)Scales to large distributed attack with thousands of attacker [9]. Jenshiuh Liu et al proposed Dynamic Probabilistic Packet Marking (DPPM) for IP traceback. It is an improvised effectiveness of PPM method. This method minimizes the number of packets that needed during traceback, efficiently utilizes all the leftover probabilities and removes the uncertainty introduced in Spoofed packets if every packet gets a legitimate marking, this pinpoints the attackers location [10] Rafael p. Laufer et al proposed IP traceback mechanisms for single packet. Now a day, single packet is sufficient to launch attack to have control over network resources. Earlier traceback schemes are efficient to more than one packet attack. In other words scalability is less. This scheme has improved scalability as it can both single packet and more packet attack [12]. Allison Mankin et al designed an Intension Driven for ICMP traceback. In network Telescopes use a database to observe Spoofing activity. The database used is either CAIDA or iTrace. To improve the effectiveness of iTrace Intention driver is introduced, which conceptually introduces an extra bit in the routing and forwarding process. DoS infrastructure consists of two roles playing within which is Master and Slave. Here master receives attack command and sends it to slave, slave receives accepts and bring the attack into action. Intention Driver considers different scenarios and plots are simulated in ns2 [14]. Vrizlynn L.L. Thing et al proposed an ICMP traceback with Cumulative path (iTrace-CP). iTrace-CP performs with dynamic probability adjustment against hoping distance. Simulation results show performance upto 190% to 143% with path lengths of 15 and 20 hops [15]. Andre Castelucio et al proposed AS-level Traceback system that includes the advantages BGP to build an AS-level overlay network [16]. André Castelucio et al proposed Intra-domain traceback using OSPF. The advantages of OSPF protocol is used to an intra-domain network overlay to trace attacked packets. This method eliminates the need for deploying on routers. There is tradeoff between accuracy and progressive and partial deployed traceback system. Simulated results show that these devices placed in network are efficient in filtering and blocking the attacked packets. About 20% of network domain take part with this Intra-domain overlay network and is capable of indentifying almost 60% of attacking packets distribution action taken against attackers [17]. Jun Li et al proposed a traceback method that is applied in large scale in high speed internet. IP traceback is based on "logging sampled packet digests". The sampling rate is low (i.e. 3.3%) enough to scale to very high link speed for example OC-768. The introduced One-bit Random Marking and Sampling (ORMS) is resistant to the tampering the attacker. There is a tradeoff between victims using traceback and its accuracy [18]. Haining Wang et al used a Hop-Count Filtering (HCF) to defend against Spoofed IP traffic. HCF detects and discards Spoofed IP packets. With medium memory storage HCF constructs IP2HC mapping table through IP address aggregation and hop count clustering. It can remove 90% Spoofed traffic and works on Linux kernel [21].

B. REQUIREMENTS FOR IP TRACEBACK

The ideal properties of traceback mechanisms are discussed here. A traceback method needs to provide few benefits even when there is a use of small number of routers and small hardware.

Few packets: In reality a traceback method or an algorithm used to trace the attacked packet can trace with few packets then that mechanism is beneficial when forensics is considered.

Scale: A traceback system must be able to scale from small to large attacks. In others words the same system must be able to trace with few tens to thousands attackers even in presence of small positive or negative.

Router Change: If a traceback mechanisms use small router that requires minimal hardware change to have insignificant overhead for packet forwarding.

Local: Enabling the victim to do traceback locally. Because as the victim might not be able to rely on communication infrastructure which is under attack.

Memory Requirement: The memory storage required at the either at the router or at the traceback serves in network. An ideal traceback should not demand for storage on network device. Few traceback schemes require storage at routers those are logging and hybrid. Example SPIE uses 23.4GB memory storage in the core of the router.

Router processing overhead: Performance of router in traceback is very much essential hence due to more number of computations the processing degrades. For an ideal property of traceback, the router should use minimal or less processing overhead incurred at network. Computation overhead is less in PPM logic compared to SPIE.
Reliability: protection implies the ability of traceback that

produce realible traces with limited number of network elements is very challenging. An ideal method should pretend as if the device is not a part of the method when the device becomes subverted. The method that use router at every place during tracing attack path fails to produce realible results.

Number of Bits Overridden in IP Header: IP header field carries little information such as distance, router details. Overriding the identification field would affect the fragmented traffic. Lesser the number of bits is overridden the better the scheme.

Number of packets required to traceback: Few schemes use single packet to trace the attacked path. ew other schemes use multiple packets to trace the attacked path. The scheme that uses single packet to detect attacked path leads to fewer false positive than compared multiple packet to detect attacked path.

Accuracy: The accuracy of any traceback system is precisely identifying the path followed by attacker. Accuracy is degraded by false positive or false negative. False positive is that the system identifying a legitimate node as attacked node. False negative is that the system failing to recognize the attacked node.

II. IP PROTOCOL AND ICMP PROTOCOL

A. IP PROTOCOL

Internet Protocol (IP) is a network layer protocol that defines the basic unit of data transfer (IP datagram) and IP software performing the routing function. IP is comprised of set of rules that narrates the idea of unreliable packets being delivered they are (1) How routers and Host are going to process the packet. (2) How and when the generation of error message should take place. (3) In certain conditions which are the packets should undergo discarding procedure. There are many protocols that an IP relies on to perform essential routing and control functions. One example for controlling function is that the use of ICMP, multicast signaling protocols. The other example for setting up routing tables for ease of transmission without any loss or being trapped of the data, those are RIP, OSPF, BGP,etc.

B. INTERNET CONTROL MESSAGE PROTOCOL

The Internet Control Message Protocol (ICMP) is a helper protocol that supports IP and all ICMP packets are encapsulated as IP datagram. If a router could not forward a packet for some reason say the TTL value reaches 0, or if the packet length is greater than the network MTU, it would send an error message back to the source to report the problem. The protocol that handles error and control message is called Internet Control Message Protocol. Each ICMP messages format begins with a type field to identify the message. Some ICMP messages types are echo reply, destination unreachable, source quench, redirect, echo request, time exceed, parameter problem, timestamp request, and timestamp reply. ICMP messages are divided in to two namely error-reporting messages and query messages. The error reporting messages report problems that a router or a host (destination) may encounter. The query messages get specific information from a router or another host. It is used by network devices, like routers, to send error messages indicating, for example, that a requested service is not available or that a host or router could not be reached. ICMP

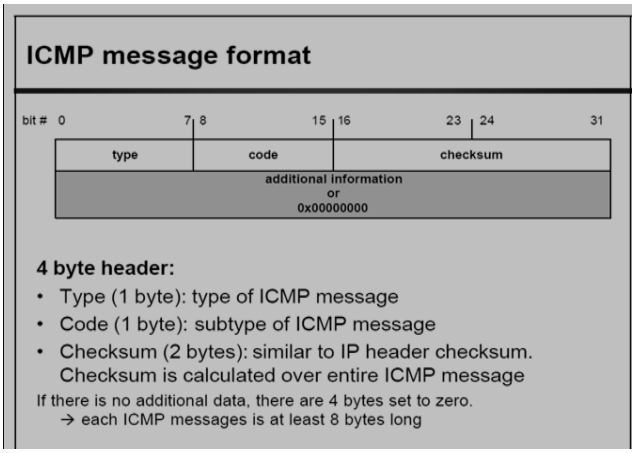

Figure.1. General Format of ICMP message

can also be used to relay query messages. It is assigned protocol number. The ICMP differs from transport protocols such as TCP and UDP in that it is not typically used to exchange data between systems, nor is it regularly employed by end-user network applications. The figure 1. Shows the general format of ICMP messages.

III. IP SPOOFING

Ip spoofing, this means that attackers launching assaults with solid source ip addresses, has been recognized as a intense security difficulty on the internet. by using using addresses that are assigned to others or not assigned at all, attackers can keep away from locating their authentic locations, or decorate the impact of attacking, or launch mirrored image primarily based attacks. ip spoofing also can be a method of attack used by community intruders to defeat network security features, along with authentication based totally on ip addresses. this method of attack on a remote device may be extremely tough, as it entails enhancing heaps of packets at a time. this type of assault is simplest wherein believe relationships exist among machines[7].
The concept of ip spoofing, became to begin with discussed in instructional circles in the 1980's. at the same time as recognised about for some time, it changed into on the whole theoretical till robert morris, whose son wrote the primary net computer virus, observed a safety weakness in the tcp protocol called collection prediction. stephen bellovin mentioned the hassle in-intensity in safety issues in the tcp/ip protocol suite, a paper that addressed layout problems with the tcp/ip protocol suite. another infamous assault, kevin mitnick's christmas day crack of tsutomu shimomura's gadget, employed the ip spoofing and tcp collection prediction techniques. while the popularity of such cracks has decreased due to the loss of life of the services they exploited, spoofing can nevertheless be used and needs to be addressed by means of all security directors.

A. TYPES OF SPOOFING ATTACKS

The spoofing attacks are classified in to various categories which are effectively employed in IP spoofing by the attackers.

i.) **Non-Blind Spoofing:** This type of assault takes area whilst the attacker is at the same subnet because the sufferer. the series and acknowledgement numbers can be sniffed, casting off the capacity trouble of calculating them accurately. the most important danger of spoofing in this instance could be session hijacking. this is accomplished by using corrupting the facts

circulate of a longtime connection, then re-setting up it based on accurate sequence and acknowledgement numbers with the attack machine.

ii.) **Blind Spoofing:** This is a extra sophisticated assault, because the sequence and acknowledgement numbers are unreachable.. it became enormously easy to find out the precise method by way of reading packets and tcp periods. Now an day's maximum oss are enforcing random series quantity technology, making it difficult to are expecting them as it should be. a nicely crafted attack ought to add the considered necessary information to a gadget (i.e. a brand new person account), blindly, enabling full get entry to for the attacker who was impersonating a relied on host.

iii.) **Man in the Middle Attack:** Both types of spoofing are forms of a common security violation known as a man in the middle (MITM) attack. In these attacks, a malicious party intercepts a legitimate communication between two friendly parties. The malicious host then controls the flow of communication and can eliminate or alter the information sent by one of the original participants without the knowledge of either the original sender or the recipient. In this way, an attacker can fool a victim into disclosing confidential information by "spoofing" the identity of the original sender, who is presumably trusted by the recipient.

iv.) **Denial of Service Attack:** IP spoofing is sort of continually utilized in what's presently one in all the foremost troublesome attacks to defend against – denial of service attacks, or DoS. Since nuts are involved solely with overwhelming information measure and resources, they have not worry regarding properly finishing handshakes and transactions. Rather, they want to flood the victim with as several packets as doable in an exceedingly short quantity of your time. so as to prolong the effectiveness of the attack, they spoof supply information processing addresses to form tracing and stopping the DoS as troublesome as doable. once multiple compromised hosts ar taking part within the attack, all causation spoofed traffic, it's terribly difficult to quickly block traffic.

v.) **Misconceptions of IP Spoofing:** While a number of the attacks delineate on top of ar a little obsolete, like session hijacking for host-based authentication services, scientific discipline spoofing remains rife in network scanning and probes, furthermore as denial of service floods. However, the technique doesn't afford anonymous net access, that may be a common idea for those unfamiliar the follow. Any variety of spoofing on the far side easy floods is comparatively advanced and employed in terribly specific instances like evasion and affiliation hijacking.

B. SECURITY AGAINST SPOOFING

There are a few precautions that can be taken to limit IP spoofing risks on network, such as:

i.)**Filtering at the Router:** Implementing ingress and egress filtering at the border routers may be an excellent spot to begin your spoofing defense. Associate implementation of associate ACL (Access Management List) that blocks non-public informatics addresses on your downstream interface. In addition, this interface mustn't settle for addresses along with your internal vary because the supply, as this is often a typical spoofing technique accustomed circumvent firewalls. On the upstream interface, you ought to limit supply addresses outside of your valid vary, which can stop somebody on your network from causing spoofed traffic to the net

ii) **Encryption and Authentication:** Implementing coding and authentication will cut back spoofing threats. each of those options square measure enclosed in Ipv6, which is able to eliminate current spoofing threats. in addition, you ought to eliminate all host-based authentication measures, that square measure generally common for machines on an equivalent subnet. make sure that the correct authentication measures square measure in situ and administered over a secure (encrypted) channel.

C. IP SPOOFING OBSERVATION

It is a elementary technique for passive observation of spoofing activities on the net. Network telescope [23] captures non-solicited messages, that area unit in the main generated by victim attacked by traffic with supply prefix set within the scope in hand by the telescope. Then, it will be determined {a part|a neighborhood|an area unita|a district|a region|a locality|a vicinity|a section} of nodes that are attacked by spoofing traffic. Currently, the biggest scale telescope is that the CAIDA UCSD telescope, that owns 1/256 of all the IP addresses and is principally accustomed observe DDOS activities and worms. Moore el at. [10] given a method named "backscatter analysis" that infers characteristics of dos attacks supported traces collected by the network telescope. tho' ICMP error messages area unit mentioned within the paper, it doesn't any investigate these messages to trace spoofers. CAIDA provides in public accessible knowledge. the most analysis and experimental work of this text area unit performed on the information equipped by CAIDA. The MIT spoofer project tries to disclose that networks area unit ready to launch spoofing primarily based attacks. Volunteer participants install a shopper that tests the spoofing ability of their hosts and networks. The datum result shows 6700 ass out of 30205 don't filter spoofing. The figure2 shows the network telescope captures path break up in random spoofing attacks.

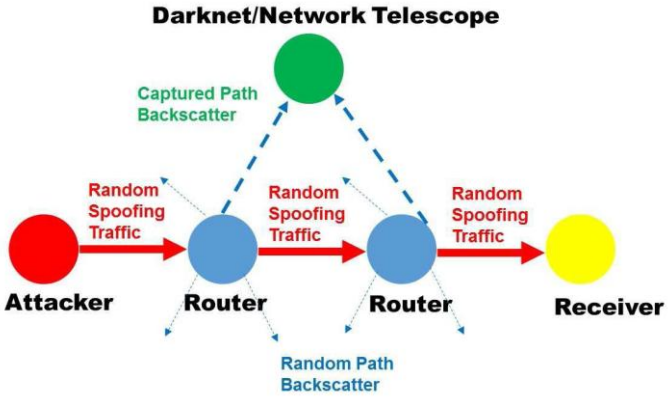

Figure.2. Network Telescope captures path backscatter.

IV. PATH BACKSCATTER

A. PATH BACKSCATTER MESSAGE

In network transmission, several packets aren't delivered in their

meant destination. A router could fail to forward a packet as a result of numerous factors. it's going to turn out path break up message (ICMP error message) beneath some circumstances. The supply information processing address indicated within the original packet can receive the trail break up messages. If the supply address is spoofed, then the messages are sent to the node who really owns the address. This suggests that the victims of reflection based mostly attacks, and hosts whose addresses square measure utilized by spoofers, could collect such info [10]. The Figure three. Shows the method of Path break up Generation and assortment.

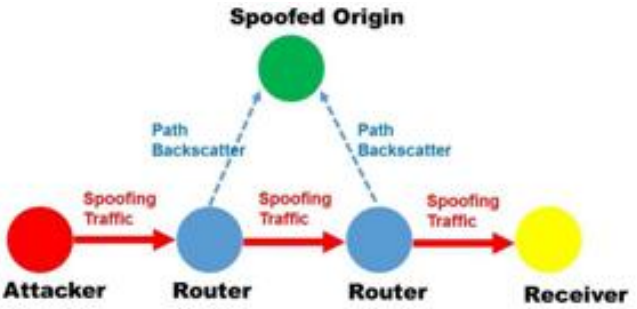

Figure.3. The path Backscatter generation and collection.

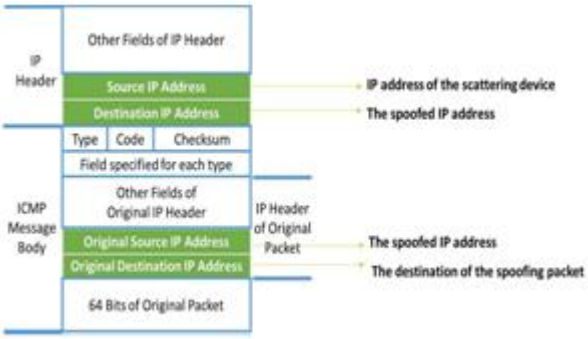

Figure.4. the format of the path Backscatter messages.

The structure of the path backscatter message is shown in figure 4. Each message contains mainly two parts: IP header and ICMP message body. The IP header part contains

i.) The IP address of the scattering device i.e. router, which is on the path from the attacker to the destination of the spoofing packet;

ii.) The spoofed IP address i.e. the victim.

The ICMP message body part contains

i.) The spoofed IP address;

ii.) The original destination of the spoofing packet.

The original IP header also contains the remaining TTL of the spoofing packet.

B. PASSIVE IP TRACEBACK

The Distributed Denial of Service (DDoS) attacks area unit launched synchronously from multiple locations and that they area unit extraordinarily more durable to sight and stop. distinctive verity origin of the assailant at the side of the required preventive measures helps in interference more occurrences these forms of attacks. The problem of tracing the supply of the attack deals with the matter of science traceback.

V. METHODOLOGY

SENDER MODULE: Sender module can select the text file from his system, then file content will converted as packets and it will be transferred to respective destination via the home router. The home router will send to neighbour router, then it will ask all the router the respective node is available in their network or not.

RECEIVER MODULE: Receiver module can receive the data from any of sender. After receiving the data it will store in local drive.

ROUTER OPERATION: Router will receive the data from other router and transfer to nodes in router. If any node transfers them to other node it will receive and pass via router. Router will maintain the logs of sending and receiving. Router will maintain threshold value for sending packet data to other node. Router will find the IP spoofer origin by Trace back concept. Trace back algorithm takes packet logging input and tells the is the origincal IP of IP spoofer and disconnect that node from the network. And IP spoofing requester also will be disconnected from the network.

SPOOFING REQUEST MODULE: Spoofing requester will give the IP spoofing request to any node in the network. Then the node will act as IP spoofer. Then it will be keep on sent the packets to other node via router. Because of this process the receiver node will be affect by network traffic.

TRACEBACK PATH BACKSCATTER MODULE:

Trace back algorithm perform the operations based on packet logging concept. In figure 8, architecture diagram we can see the Nodes N1, N2, N3, N4 and N5. Routers are R1, R2 and R3. As we know in certain period of time, node N1 can transfer any amount packets of data. According the network settings there is a threshold value for each node. If it crosses the limit then we can tell some issue is there with that node.

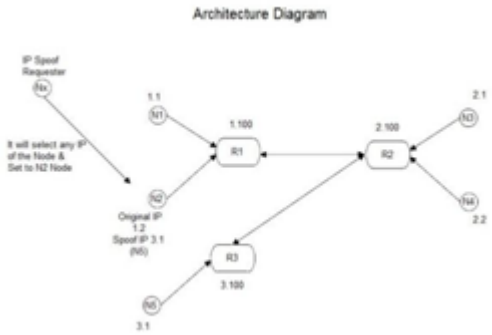

Figure .5. System Architecture.

In the Diagram Spoofing requester will gives IP spoofing request to Node N2. Then spoof requester will give the Spoofed IP (192.168.2.2) to Node N2. That spoofed IP is belongs to the R2 network, Node name is N4. Then N2 will select the destination randomly and transfer the packets and make the destination (i.e., Destination) N5.N2 will pass via home router R1. The logs will be stores in the database. Then it will be transferred to nearest router in the network. At last it will receive the destination.

A. ALGORITHMS FOR FOR IP SPOOFING MODULE

Input: Number of Nodes in Network

Output: Spoofing request to Node N

Steps:

1. Start
2. Let N be the number of Nodes in the network
3. Generate the Random number between 0 to N (Number of Nodes)

a. If(N==0)

i. Generate another Random number between 0 to N.

4. Let R is the random number

5. If the Random number r is 5 then N5 will act as a IP spoofer Node
6. It will perform the IP forging. Means randomly select the IP address of other node in the network. Then that IP address it will use for data transfer.
7. And it will send the data to destination (selected from network randomly) packets to other nodes without stopping, and then it will create network traffic
8. Stop

B. ALGORITHM FOR IP PATH BACKSCATTER AND TRACEBACK

Input: Number of Nodes in Network
Output: Disconnect the IP Spoofer node & IP Spoofing Requester node from network
Steps:
1. Start
2. Find the Victim node from logs from database.
3. Let victim node VN= who is received the data from the IP Spoofer;
4. As in architecture diagram there are 5 Nodes and 3 Routers.
5. Router or Network admin will perform its task.
6. The Traceback task start from N4, because of N4 is affected by network traffic.
7. N4 node will report to home router (R2) node, Then the R2 will find the node is presents in the R2 network or not.
a. If presents
i. Perform Step 10
b. Else
i. Perform Step 8
8. There are 2 neighbors (R1 & R3) for Node N2
a. That router information will be retrieved from database.
b. It will maintained by network admin.
9. Then Router R2 will ask Router R3 is the Node with same IP address is exists in your network
a. If Node with Same IP presents
i. Perform Step 10 (**According to Architecture diagram this case will work**)
b. Else
i. Perform Step 9
10. The Node is found with same IP address
a. Then the network Admin may doubt on the Node N5. Because it is have the same IP address of Sender (Network Traffic Creator)
b. Network Admin will keep the Threshold value for data transfer of each node. If anybody sending the same packet which is having same content and same size then some abnormal condition is happening.
c. Next it will check the logs of Node N5
i. Assume sent logs N5_log=5
ii. Assume N2 Received count=110 (VN Received count)
iii. Threshold value for the Router R3 is only 10 1. Let T_value=10;
iv. Perform Step 12 & pass T_value
11. Then perform back tracking From R3 to R2.
a. R2 will request another Router R1 to detect network traffic creator
b. R2 check the logs of R1 router it is transferred
c. Let N be the number of Nodes in R1 router
i. For I = 1 to N 1. transfer_count =logs of Ni
ii. Perform Step 12
a. This is not a Network Traffic creator
b. Perform Step 9
12. If Ni_log<T_value
Else
1. Network admin will disconnect the node from the Network. Then any node in the network won't transfer the data to those nodes (N2)
2. Check the Previous activity of N2. After the communication of which node he is acting like Forgery node, Then Network Admin will block Nx also from the network
13. Stop

VI. RESULT ANALYSIS

We have taken output in two cases, first case checking for the normal case that is analysing one data transfer from one system another which is connected in network. In another case analysing the attack or spoofing action.

We have used three systems (laptops), to act as node and a router. According architecture diagram we have 5 nodes and 3 routers, each system takes the role of node and router. we here discusses about the spoofing attack hence we describe the second case, firstly setting up a node to send spoofing request which steps as proposed in Algorithm A, Node 1 acts spoofer spoofing the IP address of Node5 induces attack to Node 4. Node 4 during reception of messages analyses it as a message received from Node 5. Latter when Node 4 realizes that its network notable launch any communication across the network since its network is facing lack of available network resource due to continuous reception of messages from Node 1 with Spoofed address of Node 5, it brings this to notice to its home router R2, which performs back scatters analysis to identify and locate spoofer and its address in network. R2 also takes a future step ahead in discarding the Node from network that is Node 1 is removed from the network by grabbing the internet facility from the system.

We can visualize action of router on the system monitor indicating Red Cross mark on the network icon saying that that is not allowed to participate in the internet for future transmission of data. We here show the database of the nodal which has the table showing the details of router id (r_id), node IP address and its current status in network weather functioning or being blocked due to node being involved in spoofing action.

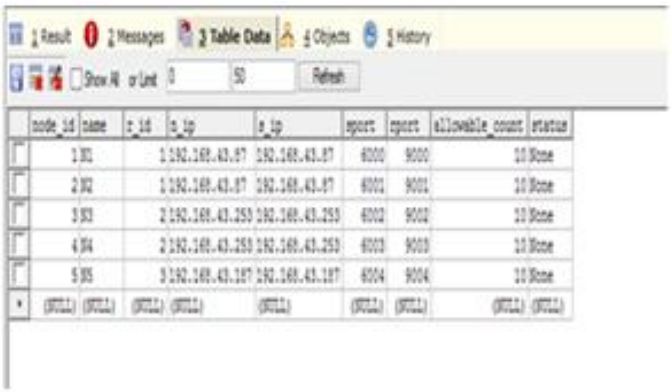

Figure.6. Screen shot showing IP address of nodes and its status.

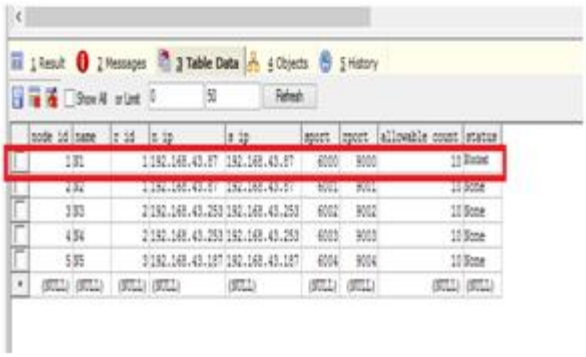

Figure.7. Screen Shot showing the status of node1 after the analysis of router R2.

VII. CONCLUSION

We try to dissipate the mist on the locations of spoofers based on investigating the path backscatter messages. In this, we proposed Passive IP Traceback (PIT) which tracks spoofers based on path backscatter messages and public available information. We illustrate causes, collection, and statistical results on path backscatter. We specified how to apply PIT when the topology and routing are both known, or the routing is unknown, or neither of them are known. We presented two effective algorithms to apply PIT in large scale networks and proofed their correctness.

VIII. REFERENCES

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