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Network Protection against Internet Attacks

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***Abstract*- Computer networks are mainly used for Data share one node to another node using in Internet like data send message email and file but Data are not secure. Today case is data crush using virus, malware, Denial of Service (Dos), Spoofing and Phishing attack. My Research paper is providing basic security in this attack.**

Keyword- TCP/IP model, Malware, Dos, Spoofing, Phishing, Strong password, Antivirus, Firewall, VPN.

INTRODUCTION

Today is data share one place to another place using in computer network or Internet. Computer network is a provide share resource one node to another node.
For example:-Data share, file share, etc.
Internet means worldwide system in computer network. Computer network are using in Internet share a data one place to another place. Internet is a private network in world.
For example: - Internet communication, share information, social media etc.

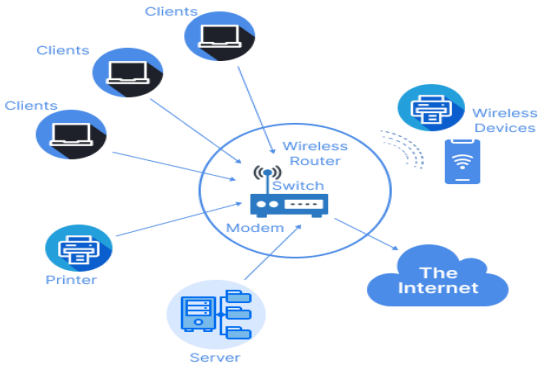

Figure: 1 Computer network using Internet

Computer network are used TCP/IP model. TCP/IP model four layers are Network access, Internet, Transport and application layer. Computer network are OSI (Open system Interconnection model are using make in TCP/IP model. OSI model are used in 7 layers but TCP/IP model is used 4 layers. OSI model are physical + data link layer are used make is Network access layer in TCP/IP model. OSI model are network layer are used in make in Internet layer in TCP/IP model. OSI model are transport layer are TCP/IP model are same. OSI model are session + presentation + application layer are used in make in application layer in TCP/IP model.

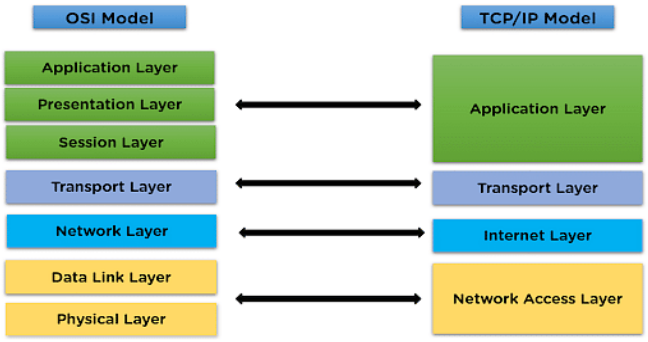

Figure: 2 OSI MODEL and TCP/IP MODEL

TCP/IP model are used in four layer in computer network are used in different – different protocol.
1) Link layer: Link layer are hardware interface layer in TCP/IP model are used mostly two protocol first are ARP (Address Resolution Protocol) and second is RARP (Reverse Address Resolution Protocol) and MAC (Medium Access control).
2) Network layer: Network layer are second layer is TCP/IP model are used mostly two protocol are internet protocol first are ICMP (Internet Control Message Protocol) and second
IGMP (Internet Group Management Protocol) and IP address Internet address like IPV4 and IPV6.
3) Transport layer: Transport layer are third layer is TCP/IP model are used mostly two protocol are transport protocol first are TCP (Transmission control protocol) and second UDP (User datagram protocol).
4) Application layer: Application layer are fourth layer is TCP/IP model are used in protocol are FTP (File transfer protocol), SMTP (Simple Mail Transfer Protocol), and FTP (File Transfer Protocol).

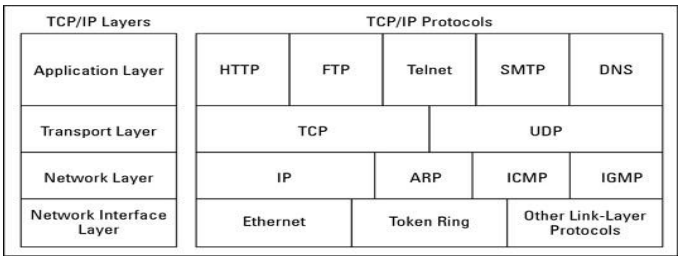

Figure 3: TCP/IP Protocol

TCP/IP model are important four layers in computer network or Internet. Mostly used in four layer protocol are share data like file e-mail one location to another location but today are data cannot secure in computer

network. Hacker is hack data or Information in system or any Internet medium.

Internet Attack: Internet attack means used in internet are attack in computer network.

Internet Attack mostly two type:-

1) Passive attack: Passive attack means only see the data or Information in Internet but cannot change or modify the data in computer network or Internet.

For example: Various like Footprinting, Spying.

2) Active attack: Active attack means both work see the data or Information and change or modify the data or Information in computer network or Internet.

For example: Masquerade attack or DOS (Denial of Service) attack.

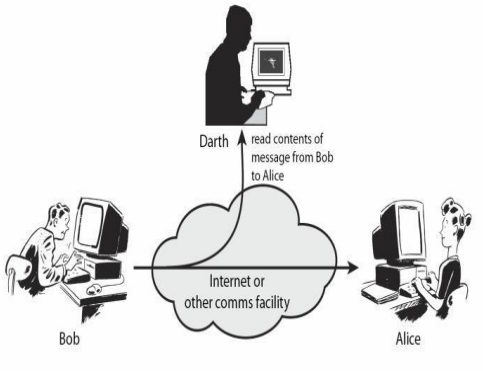

Figure:4 Passive Attack

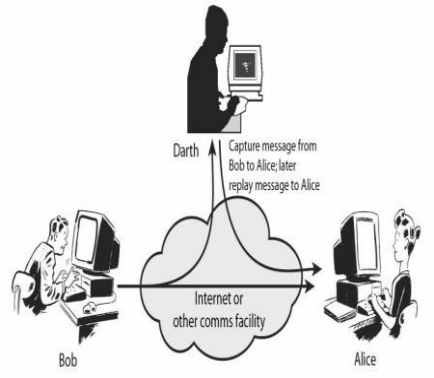

Figure: 5 Passive Attack v/s Active Attack

Internet attack: Internet attack means use an Internet various type attack in computer network.

For example:

1) Malware: Malware is malicious software or program are send Internet medium of any computer or any server. Then send in any computer or server are harm to computer or server data.

Malware type:

1) Ransomware
2) Spyware
3) Adware
4) Trojan
5) Worms
6) Mobile Malware
7) Rootkit

1) Ransomware : Ransomware is a Malware . Today are very popular this malware. Ransomware attack in computer network is file of data. Ransomware are send to interment medium of any computer or Sever file hack means encrypts victim's data or file or use in own password then provide the decryption an user are pay in payment.

For example: Like this my computer/pc are attack in ransomware using an Internet medium using in my file system are own password in my file system or then message are show my screen pay your payment an otherwise file are crush.

2) Spyware: Spyware is a malware. Spware working is computer or other device collects data without user permission.

For example: Like this my computer are attack in Spyware are using internet medium using my data or contact without my persimmon using by web activity.

3) Adware: Adware is a type of spyware . Adware working are watches online activity in user.

For example: Like this my comparer are attack in Adware then working in online mode all activity are show.

4) Trojan: Trojan is a type of malware. Trojan are using internet medium are download any software an operating system are harmless file. Trojan is installing in any phishing websites.

For example: Like this my computer are attack in Trojan then working in free download file in operating system are file harmful in my pc.

5) Worms: Worms is type of malware. Worms are using internet medium are self contained a program and replace a self copies and computer. Main target are modify the file and delete file in computer.

For example: Like this my computer are attack in Worms then working in my file are delete or modify file.

6) Mobile Malware: Mobile Malware is type of Malware. Mobile malware are using internet medium are target in mobile device. Mobile malware are using in mobile harmful of file and hack the Wife.

For example: Like this my mobile are attack in mobile malware then working in my mobile phone are crush data or my Wife are unsecured.

7) Rootkits : Rootkit is a malware . Rootkits are using internet medium are using software design then see or Control the computer network and its application.

For example: Like this my computer are attack rootkits then using in computer network or its application.

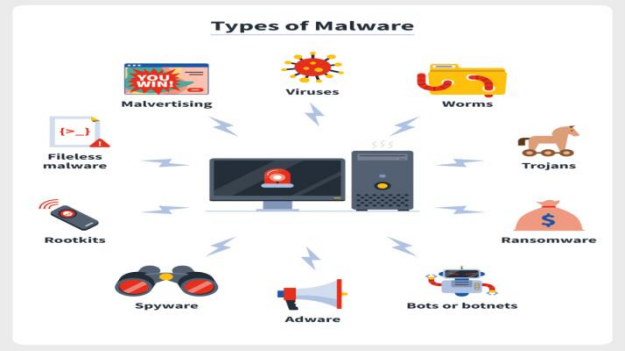

Figure: 6 Type of Malware

2) Dos (Denial of Service) Attacks: Dos (Denial of Service) attack is a attack in computer network. Dos attack is attack in network a hijacked computer/server. Used in network are request any target no used any bandwidth. This attack is mostly target are Financial data user
Personal data, email address.
For example: Dos (Denial of Service) attacks like using internet medium are targeting my pc then first using the networking. Networking means using router, switch and another connecting are target in server. Dos are mainly target are Financial data and email address and login activity.

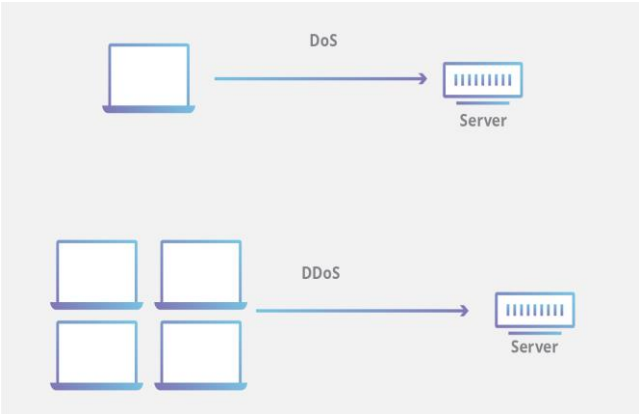

Figure: 7 Dos attack

3) Phishing : Phishing is a type of cyber attack. Phishing are used in victim technique. Phishing are target email, phone, and message. User is hack password, phone number and any personal data.
Phishing are mainly four types:
1) Spear Phishing: Spear Phishing is target only email.
2) Whaling : Whaling are target only money information.
3) SMiShing: SMiShing are target only Password, usernames and Credit cards number.
4) Vishing: Vishing are targeting only phone call and voice message.

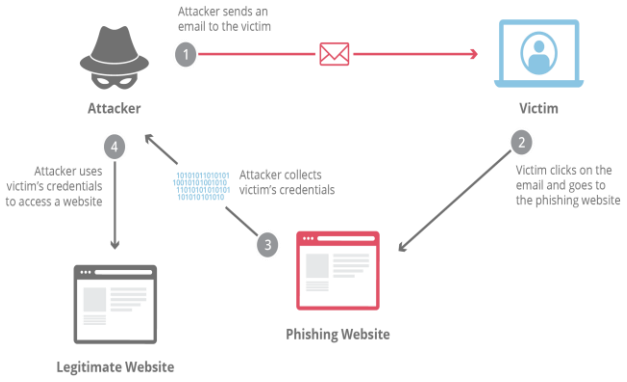

Figure: 8 Phishing attack

4) Spoofing : Spoofing is a type of cyber attack. Spoofing are used Cybernial used in trusted source. Spoofing is target system or device main working is install malware in pc and information are hack the system.
Spoofing is mainly three types:
1) Domain spoofing: Domain spoofing is target only or attack is fake website and email send provide the domain and hack the important information of any device.
2) Email spoofing: Email spoofing is target only send email are hack the business account.
3) Address Resolution Protocol: ARP spoofing is target only attack is one device to send the data are another device is using in address resolution protocol or hack the device information or data.

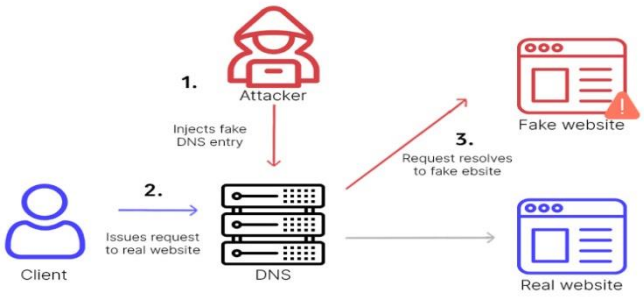

Figure: 9 Spoofing attack

5) Identity based attacks: Identity based attack is a cyber attack and system. Identity based attack are working in internet medium then target a used identity related information.
Identity based attacks mainly two type:
1) Password spraying: Password spraying attack in used internet medium will hack the password of any system. Mainly used this target of personal password of any backing password pc password file password of any system then hack the all password device.
2) Brute Force Attack: Brute Force attack is is a cyber attack any system. Brute force attack are working in internet medium used in encryption key used to system are attack password or username. Brute Force attack are very steak attack any device its target are 100% attack and success.

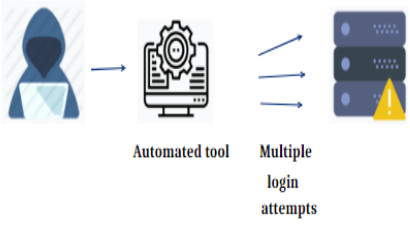

Figure: 10 Identity based attacks

Another type of attack is like this SQL injection attack is

used to SQL command hack any database system and device. So, mainly attack are using an internet medium are attack in computer network.

RESULT

Different type of attack is discuses use a internet medium are target an computer network or any device. This attack harmful of computer system hack the file, password, business account e-mail, phone number and personal information of any device or computer system.

So, protection of network an internet attack is using some method:

1. Strong password: Strong password means any device is use strong password. Like 8 char are using strong password are number, lowercase, uppercase and symbol. Easy password like 12345678 cannot use a system. Easy passwords some second hack in hacker are used in any technique. Use only strong password is like this Ab1@3$4@^

%@654.

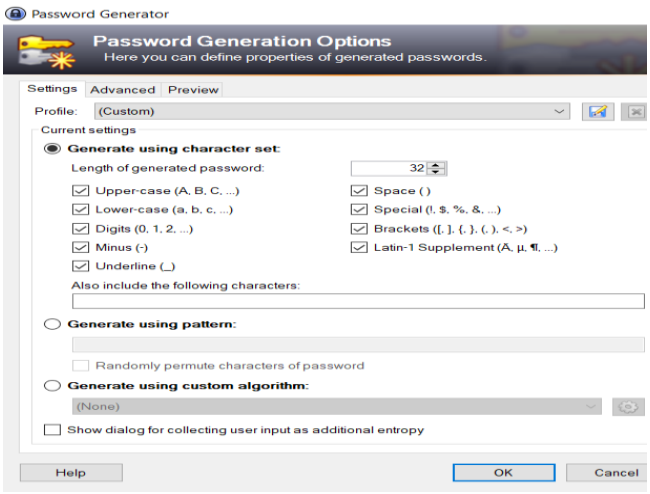

Figure: 11 Strong password any system/device

2) Use antivirus software: Antivirus software is providing a protection any computer system. Hacker is target a computer system and hack the system then provide the security and system.

Antivirus software like this

1. McAfee antivirus: McAfee antivirus is providing the security all devices some like mobile and computer system. McAfee antivirus use malware detection is any system or device.

2. Bitdefender: -Bitdefender is an antivirus software are provide the protection Ransomware and any password attack hacker in device or any system.

3. Nortron:- Nortron is a antivirus are provide the security firewall, backup and password of any system.

Figure 2

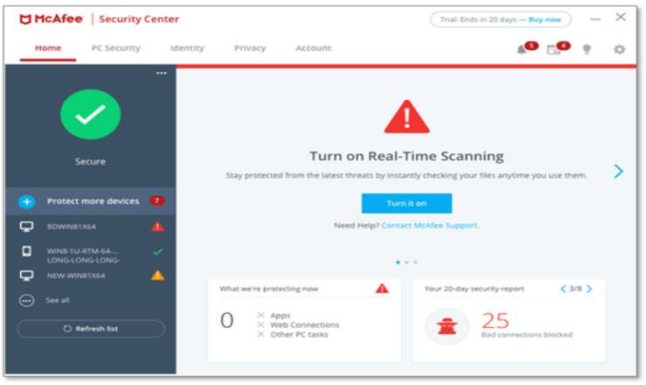

Figure: 12 McAfee antivirus scan pc

3) Firewall: Firewall is a device computer network is providing the protection of unauthorized user.

Unauthorized user means harmful of computer network system.

For example: Any company is used to firewall then firewall working unauthorized user can not permission provide the company network.

Figure 3

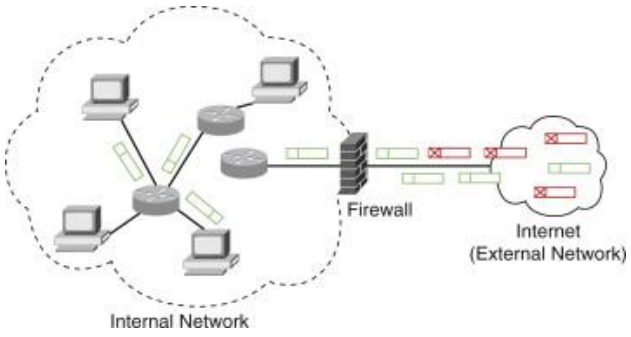

Figure: 13 Basic firewall images

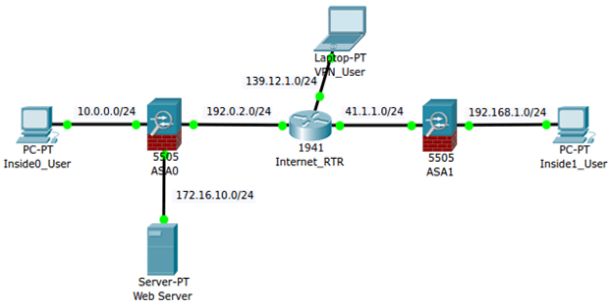

Figure 14: Cisco packet image firewall

4) VPN: VPN stand for Virtual Private Network. A VNN mostly working are IP address. IP address means Internet protocol address. Like example IPV4 and IPV6. VPN are working rule hide the IP in send network layer.

For example: VPN working are like hacker hack in system using by IP address but VPN are hide the actual IP address any system.

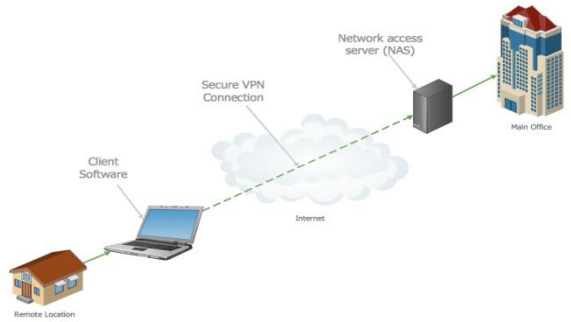

Figure 15: VPN image

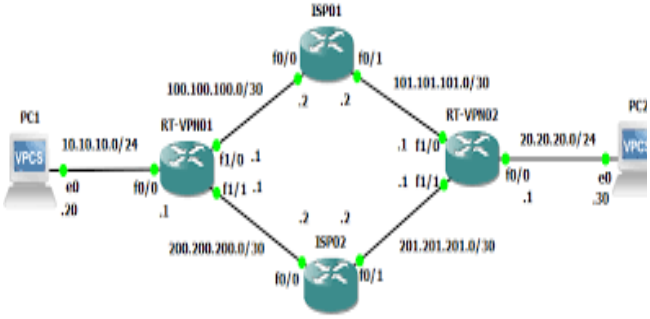

Figure: 16 Cisco packet image VPN

5) Cryptography technique: Cryptography means in computer network are provide the security used to different – different technique.

For example send the original message into the Receiver then using between are like Cryptography technique.Plaint text are converting original message into delicate message, cipher text are again duplicate message are converting in original message in computer network.

For example: Asymmetric Encryption, Secret key, and hash function.

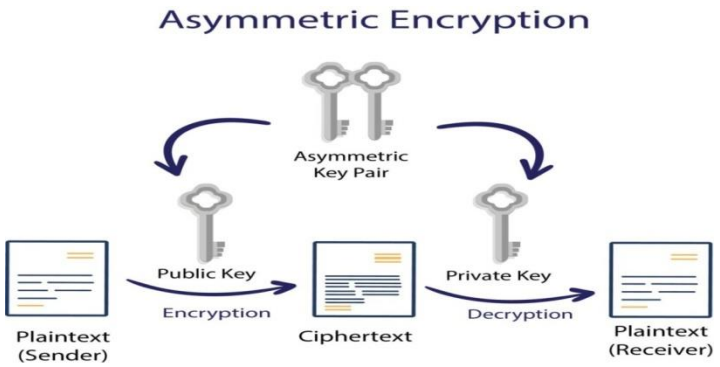

Figure 17: Asymmetric Encryption

CONCLUSION

In this research paper is basic idea in computer internet attack through the any system /device. Firstly are discuses in computer network TCP/IP model and its layer. Second discuses in all malware attack in computer system/device. Third discuses are very powerful attack like Dos and brute force attack in computer network. Last may be discuses in provide security all attack in computer network like use strong password, antivirus, firewall, VPN and cryptography technique are basic details. Today scope my research paper are everybody basic idea in hacking attack and its provide security.

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