

STUDY OF COMPUTER NETWORKING SECURITY AND SERVICES FOR PREVENTING FROM ATTACKS FOR ALL THE NETWORKING SECURITY INDUSTRY

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ABSTRACT

Computer network is a part of an inter-connecting computer and to share the details are a communication. The concept of a network began at 1962. Security is the basic component in the computing and networking technology. There were different of attacks that can be when sent across networks. Networks are the most popular event in the networking world. Computer networks were used to elaborate the process of networking community and to discussed brief about the security of the networking community, were to improve the security process. The network security is mandatory to the pc users and system users in every field of the networking fields. We need some mechanisms to overcome with high and effective ideas. With the huge development in the computer networks continues to expand the scope of application with users. In this paper we are going to know about some kind of attacks and how to protect from that.

Keywords: WAN Networking, MAN Networking, ADSL, VDSL, CSMA/CD, COAX, twisted pair and fiber cabling

INTRODUCTION TO COMPUTER NETWORKS

Network defines exchange of data between two nodes connected using ether cable media or wireless media node can include host like computers, phones, servers and etc. This paper totally explained the concept of computer security. Networks are used to provide easy access to information, thus increasing productivity of the users. this is covered to with networking as well

as basic computer security. Resources that are commonly shared in a network include the data and application. Example: Internet

HISTORY

Communication is not a new way. Early days telegraph and telegraph telephone used to communicate now a day's computer or mobile phones with internet are used to communicate. In early 1960's computers used to share data and other information physically made it difficult. New protocols new protocols developed for communication know as packet switch secured voice transmission, we can possible. In 1968 June 3rd ARPA submit a proposal of modern internet. And end title as resource sharing computer networks. Tested in four locations the new protocol was created and used to evolve today's world wide network. In 1977 LAN were spreading in home and work places. WAN development also using MAN networking. WAN networks used for place to place communication. Example: university

PROPERTIES OF COMPUTER NETWORK

FACILITATE COMMUNICATION

Communicate easy via emails, messaging, chat room, video conferencing permit sharing files and data.

FACILITATE INTERPERSONAL

One to one communication. Allow sharing file data and other files or information Providing information storage devices using authorization.

MAY BE IN SECURED

Crackers to deploy your computers using wireless or worms or DOS.

INTERFERE WITH OTHER TECHNOLOGIES

Communications interfere like radio. Communication technology such as ADSL and VDSL complex computer networking now be difficult to setup.

PROTOCOLS NETWORKING:

ETHERNET

Most widely used Ethernet users can access method call CSMA/CD. Used to listen cable before sending data. Its network is clear data will be transfer or it will wait and try again till line is clear. Important to Ethernet is now a somewhat generic term, describing the entire family of technologies. However, to use it Ethernet traditionally referred to the original 802.3 standard, which operated at 10 Mbps. Ethernet support COAX, twisted pair and fiber cabling. Ethernet always over twisted-pair uses two of the four pairs. Remember, only connections between host and a switch support full-duplex. The maximum distance of the Ethernet segment can be extended through the use of a repeater. A hub or switch can also serve as a repeater.

FAST ETHERNET

Allow to increase speed or transmission. it developed a new standard suppose up to 100 Mbps. In 1995, Fast Ethernet supports always both twisted-pair copper and fiber cabling, and supports both half-duplex and full-duplex. 100base was never widely implemented, and only supported half-duplex operation. 100baseTX is the dominant Fast Ethernet physical standard. Use two of four pairs in a Twisted-pair cable, and requires category 5 cable for reliable performance.

NETWORK TOPOLOGES

Network topologies describe the way in which the elements of a network are mapped. They describe the physical and logical arguments of the network nodes. The physical topology of the network refers to the configuration of cables, computers and other peripherals.

BUS TOPOLOGY

The bus topology is also called linear topology, one wire connects all nodes and terminator ends the wire. As shown in the figure, in a bus topology a cable proceeds from one computer to next like a bus line going through a city. the main cable segment must end with a terminator, the electrical signal representing the info bounces back at the top of the wire.

RING TOPOLOGY

In ring topology the nodes are connected in the form of a circle. Unlike the physical bus topology has no beginning or end that needs to be terminated. Data is a transmitted in a way that is very

different from bus topology. In one implementation, a token travels around the ring, until it finds destination device, which takes the data out of the token.

MESH TOPOLOGY

In this topology, each node is connected to every other node or computer and server in the network. Internet is a mesh network. In the type of network, each node may send message to destination through multiple paths.

STAR TOPOLOGY

In a star network, each node (file server, workstations, and peripherals) is connected to a central device called a hub or switch. Always topology Data in a star network passes through the hub, router, switch or concentrator before continuing to its destination. The hub, router, switch, or concentrator manages and controls all functions of the network.

TREE TOPOLOGY

A tree topology (hierarchical topology) is often viewed as a collection of star networks arranged during a hierarchy during a topology. This tree has been individual peripheral nodes which are required to transmit to and receive from each other only and aren't required to act as repeaters or regenerators.

HYBRID TOPOLOGY

Combinations of any two are more network topologies. A hybrid topology must accrue when two different basic network topologies are connected.

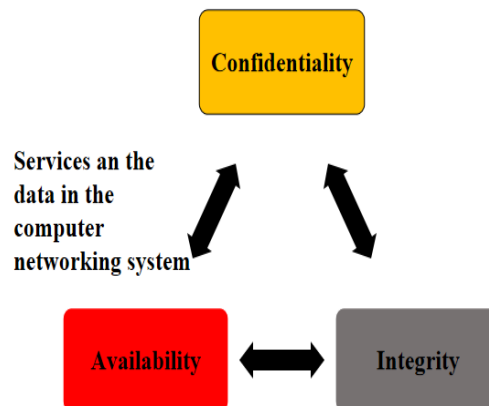


Figure 1: Services as a Data

NETWORK SECURITY

What is mean by security network? How it protects you. How does it work? These are the basic questions that you may know the answers. In answering question what is mean by security network it means it's an activity to protect a network from variety of threats and stops them from entering on your network. These are the common threats that include:

1. Viruses
2. Hacker attacks
3. Spyware
4. Data Theft
5. Identify theft So that we need multiple layers of security.

If one layer fails the other network have to protect the network layer. Network security is achieved through hardware and software. The software must constantly update and managed to protect you from emerging threats.

Network security components include

1. Anti-virus and spyware.
2. Firewall to protect unwanted access to your network.
3. Virtual Private networks to provide secure remote access.

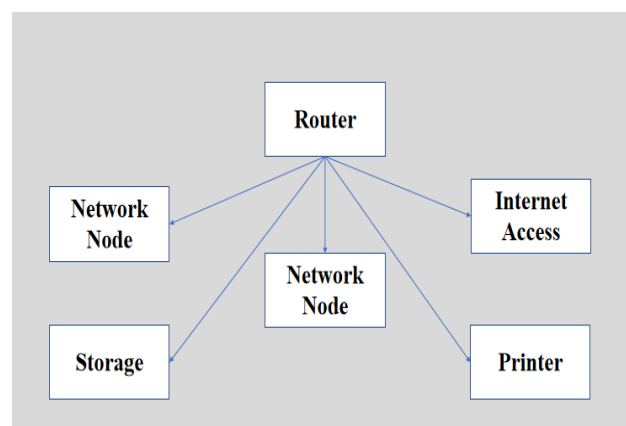


Figure 2: Router

TYPES OF ATTACKS

Networks are subject to attack by various sources. There are two different categories first is passive and second one is active. Passive attack It takes sensitive information that can be used in other type of attacks. Passive attacks result in the data files to an attacker without knowledge of the use. Active attack in this attack, the hacker tries to break the secured system in the going on

communication. These types of attacks done through viruses, worms. Distributed attack this attack requires that the adversary introduce code such as Trojan horse. It mainly focuses on malicious modification of hardware and software.

Insider attack an insider attack is a malicious attack perpetrated on a network or a computer system by a person with authorized system access. Hijack attack in this attack hacker take over a conversation between the users. Password attack the attacker try to hack the password in the network database. Ways To Improve Network Security Router Security Protection are some tips to stop unauthorized users to log into your Vigor Router, Private Network Security and Wireless Network Security introduces belongings you can do to smaller the chances of rogue devices connecting to your private network, and eventually, Internet Access Security describes what you'll do to guard the local network from the threats on Internet. Plenty of the routers on the market use an equivalent default password for his or her management page login, thus the login password of your router is extremely easy to guess. Be sure to vary your router's login password from System Maintenance >> Administrator Password page, and also adopt a password which is robust enough.

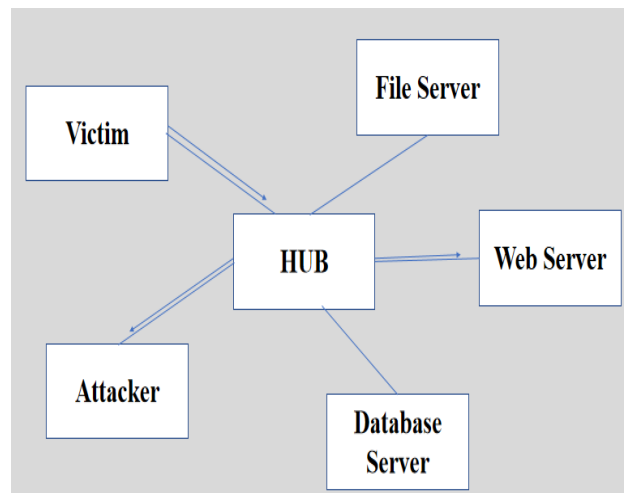


Figure 3: Hub

FIREWALL

Firewall technology is to stop others from accessing your network device. Three types of firewall technology they were namely, packet filtering, agent technology. Firewall technology can able to prevent the network from the hacker.

CONCLUSION

The computer networks and the protocols were to be changed the path of the people will do the work, play and to communicate each other. In the digital networking is may more important to future, new protocols and the new applicants will be changed and to enhanced to prevent from the attacks. Computer network is a most important and as well as difficult in some issues

involved in many perspectives, were we needed to improve more security for the networking purpose. To develop a secured networking system, in networking where we need many varieties of securities. Everyone needs the privacy and as well as security aspects, in this paper was we discussed about many attacks, security and penetrates etc. and need to develop security policies.

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