



E-Mail Security Through Static Ip Address And Biometrics-Token Card System

M.Jayakumar^{*}
Ph. D Scholar (CS)
Dept. of Computer Science,
Government Arts College, Udumalpet-642126
Tamil Nadu, India
jayakumar_mpl@yahoo.co.in

Dr. T.Christopher²
Assistant Professor & Head
Dept. of Computer Science,
Government Arts College, Udumalpet-642126
Tamil Nadu, India.
Chris.hodcs@gmail.com

Abstract: Networks are E-mails, both public and private, that are used every day to conduct transactions and communications among businesses, government agencies and individuals. E-mail technologies included the function of exchange the information, data, and files. This stage most important factor is to secure the information highly important. Data, information safety is most important factor in the processes. Hackers hack and read e-mail message may send false e-mail messages. The most important factor is to secure the information store by a user. Information can be easily copied or erased or modified. This stage implements two important factor of security in static IP address and Biometrics. Internet users assigned Static IP address is essential factor. Biometric technology is fast gaining popularity as means of security measures to reduce cases of fraud and theft due to its use of physical characteristics and traits for the identification of individuals. The main objective of this paper is to avoid unnecessary e-mail hacking by providing security through two way authentication system (Static IP address, biometric, token card system).

Keyword: Mail security, Static IP address, Internet Service Providers, Biometrics, Token card

I. INTRODUCTION

E-mail carries essential messages for the everyday workings of our business. Performing daily business transactions through electronic technologies is an accepted, reliable and necessary tool across the nation [1]. Hackers use computer programs that scroll through common names to compile possible user names, and then send spam emails to those usernames. While opening the spam email, a little hidden piece of code in the email sends a message back to the hacker letting him know that the account is valid, at which point they turn to the task of trying to guess the password. Hackers often create programs which cycle through common English words and number combinations in order to try to guess a password. As a consequence, passwords that consist of a single word, a name, or a date are frequently "guessed" by hackers. So when creating a password use uncommon number and letter combinations which do not form a word found in a dictionary. Secure emails, user friendly and easy identification and full security of common user to be discussed at this stage.

II. IP ADDRESS

An IP address identifies a computer or other device of a network [2]. The basic concept is every device on a network needs to have its own address. That way, data is sent to the right place. It might be nice if every computer have its own IP address. Unfortunately, computers come and go frequently in terms of millions are added, removed, or rearranged every day. It would be impossible for everyone in the world to keep up with the changes.

To avoid these problems the Internet community follows the procedure as:

- Only one set of address for the whole world. However, each local network uses its own address. If more than one user has the same IP address, the network doesn't talk directly to neighbor's without "translating" the address.
- Some addresses are used only temporarily. When the computer is turned off, the address is given to someone else.
- A secondary address called a *subnet mask* which changes the way the main IP address is read.

Whether for the whole world, or just for home, an IP address always has the general and common format as 192.168.0.1. The subnet mask has the same format. The subnet mask for domestic network will almost always have exactly these numbers as 255.255.255.0. Subnet mask shouldn't be changed internet being sure what it does! It is important to keep a record of these IP addresses:

- The one ISP (Internet Service Provider) provides, this one is used by the whole world to access the network.
- The address of the router on your own network. By default NETGEAR sets the router address to 192.168.0.1 or to 192.168.1.1. That's the IP address typed in an Internet browser to log in to the router.
- There are situations, to know input IP address of other devices in the network.

Whenever a computer (or network-aware) device is connected to the Internet, the Internet Service Provider (ISP) associates that connection with an IP address [3]. The IP address is a series of numbers that identify the particular connection to the Internet.

A. Importance of Static IP address:

Static IP addresses are always constant. Static IP addresses are more reliable for Voice over Internet Protocol (VOIP),

more reliable to host a gaming website or to play X-Box, Play Station, use Virtual Private Network for secure access to files from the company network computer, etc. Static IP addresses are also wonderful if user's computer serve as a server, file uploads and downloads will be faster than normal speed [4]. Another plus with Static IP's is when hosting a website it is necessary that not sharing of IP with another company who sends out a lot of E-mail SPAM and not only has their website been shut down but in turn gets users IP address blacklisted. In contrast a static IP address can become a security risk, because the address is always the same. Static IP's are easier to track for data mining companies. Static IP addressing is less cost effective than Dynamic IP Addressing.

B. Dynamic IP address:

Dynamic IP addresses may change when each time system connected to the Internet. Dynamic IP addresses are the normal access method used by most ISPs or Service Providers. When using a dynamic IP addresses, even if you are permanently connected (always-on) to some ISPs/Service Providers change dynamic IP addresses every 24 hours, others change less frequently (monthly or even longer in certain cases). Checking of local ISP's policy on IP address change frequently. The change of IP address is typically carried out between the ISP/Service Providers network and users local (on-site) DSL or other modem using the Dynamic Host Control Protocol (DHCP). It can be seen that no operational effect when the IP address changes - but neither it is not possible to stop the process.

III. INTERNET SERVICE PROVIDERS

An **ISP** is a company that supplies Internet connectivity to home and business customers. ISPs support one or more forms of Internet access, ranging from traditional modem dial-up to DSL and cable modem broadband service to dedicated lines [5]. An ISP has the equipment and the telecommunication line access required to have a point-of-presence on the Internet for the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication providers and can provide better service to their . ISP is used as an abbreviation for '*independent service provider*' to distinguish a service provider that's an independent, separate company from a telephone company.

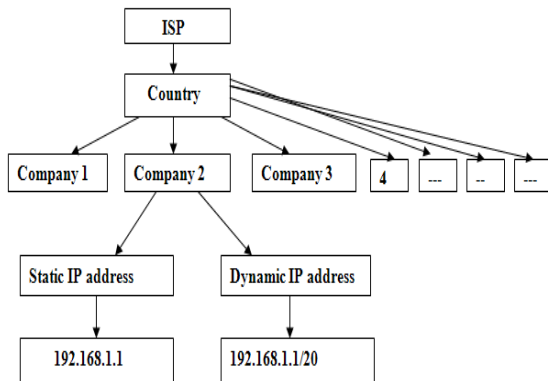


Figure-1 ISP Architecture

IV. BIOMETRICS OR TOKEN CARD WITH STATIC IP ADDRESS

Biometrics is the science of verifying the identity of an individual through physiological measurements or behavioral traits [6]. Since, biometric identifiers are associated permanently with the user they are more reliable than token or knowledge based authentication methods. Accuracy and Security Biometrics based security systems are far most secure and accurate than traditional password or token based security systems [7]. For example a password based security system has always the threat of being stolen and accessed by the unauthorized user. Furthermore the traditional security systems are always prone to accuracy as compared to biometrics which is more accurate. Biometrics security technology protects highly sensitive information from getting into the wrong hands and also prevents unauthorized physical access to safety establishments [8].

Token card is identified through secret code (magnetic code) scanned technology [9]. This technology can be used for anyone user who is IN, OUT status is maintained in organizations. Biometrics and token card system process to collect users IN details to access permission to be checked. Sending clear text e-mail messages, attachments and communicating with friends, business and your bank may be a security risk.

V. MAIL SENDER COLLECTING INFORMATION AND STATIC IP ADDRESS

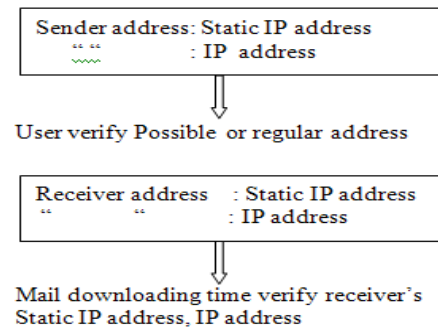


Figure-2 Static IP Collection

These two addresses get the way:
System IP address get to the ipconfig command

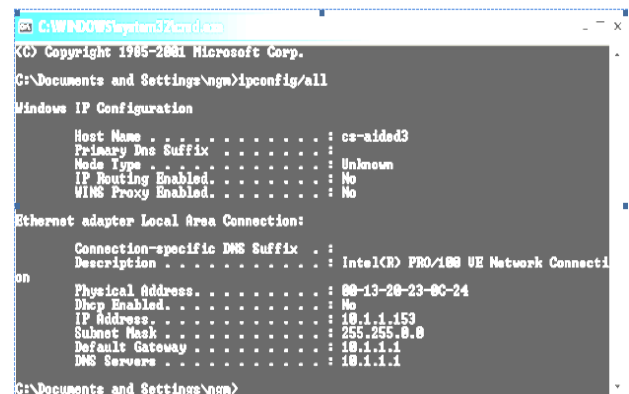


Figure-3 IP address command

System using router IP address gets in two Ways

- Open a web browser on a computer that is connected to the router (wired or wirelessly).
- In the address bar of the web browser, type <http://192.168.1.1> (Default gateway address) and press Enter on your keyboard.
- Towards the middle of the page a box of information titled "Internet Settings." This is where is found WAN IP address.

OR

Website using to get Static IP address

<http://automation.whatismyip.com/n09230945.asp> = > 118.91.234.50

<http://whatismyip.com/> => 118.91.234.50

This Static IP address and IP address to add every mail sending time.

Internet Settings	
WAN MAC address	00:1C:DF:03:A3:8D
Connection Type	Dynamic
Subnet mask	255.255.252.0
Wan IP	172.21.38.2
Default gateway	172.21.36.1
	172.21.8.99
DNS Address	172.21.8.101
	172.21.8.102
	172.21.8.100

Figure-4 Wan IP address

VI. MAIL SECURITY

A. Authentication –

Authentication is the process of verifying the claimed identify of a user. E- mail passes through many different computer systems without user knowledge. Secure Policies use email to prove that the message and attachments actually came from the user only [10].

B. Privacy –

Any non-encrypted email user message sent can be very easily intercepted and read [11]. Someone may be able to snoop on Inbox, or grab the messages. Secure biometrics or token card system and checking Static IP address allow the user to easily encrypt email and ensure that the messages and attachments may only be read by the intended recipients.

C. Integrity-

Regular, unsecured email can easily be faked [12]. Messages can be produced that look as though they were from a particular person or organization, when they were from someone completely unknown. Biometrics or token card system first checks the authorized person's IN status then continue to use system Static IP, local IP address to verify that it is impossible for anyone to alter the contents of user mail without the recipient being alerted.

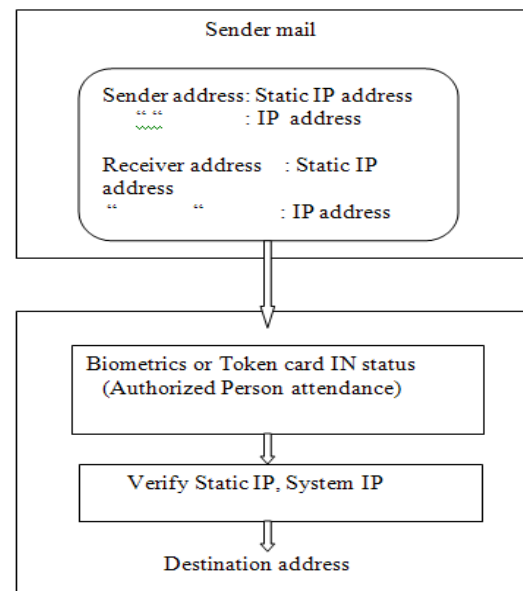


Figure -5 Email Process

Encryption and decryption to use static IP address

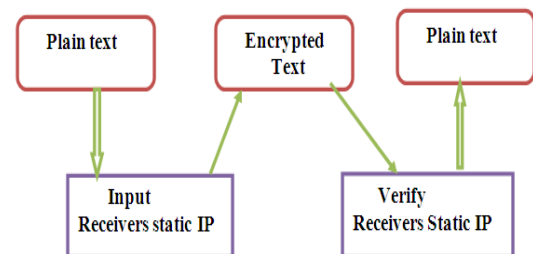


Figure-6 Encryption process

VII. CONCLUSION

Today the worldwide activities of various organizations, enterprises and institutions, general agencies and individuals are through internet. The most important security to be given during communication is "unauthorized access". It is a very high level term refers to a number of difficult sorts of attacks. The goal of these attacks is to access important and valuable resources from other machines. Hence network security pays an important role to product and prevents the unwanted access by other users, must be avoided in time.

In this procedure, the main objectives is how to avoid

- Unauthorized access of data
- Duplicates
- Hacking of password
- Hacking of messages from inbox
- Data loss

And finally to secure the information a constant IP address called static IP address (sender, receiver) may be attached to each user, while configuring and booting may be a proper security method, also a new and vital approach in E-mail security. Many organizations at presently using attendance system are biometric system or punch card system. This system using one of the way of mail security, this system monitors the person's incoming status to update every IN and

OUT status. First stage check to authorized person IN status attendance to compare database and then proceed to mail process ensure the security. Second stage verification of receiver Static IP address, System IP address and it then precedes to mail process is a highly secured measure, which ultimately reduces the unauthorized access to the maximum.

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