

Performance of WI-FI and WIMAX over Wireless Communication

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Abstract— Now a days, Wireless network is very popular one and the trouble of accessing information in some of the remote areas. Here wired network should be the inaccessible because they offered by wireless network technology. This technology changed in the way of comma WIMAX is having the increased level of privacy and security. The performance of WIMAX is more than WI-FI and also it should provide the good response in the access. Compare with WI-FI the WIMAX is the having various kinds of security mechanisms. The wireless fidelity (WI-FI) network is based on the IEEE standard .802.11 the worldwide Interoperability for microwave is (WIMAX) Is based on IEEE 802.16 the main advantages of WIMAX over WI-FI is that it covers larger areas And has higher data rates. WIMAX network operates provides WIMAX Subscriber unit that can be enable connection Metro politician WIMAX network while WIFI Units are used for connection local devices with In the home are business . Here we are using the “AES” Algorithm. Because” encrypting” our information to sharing the information. In this paper we are tried to discuss how to protect the data in the communication. Compare to WI-FI the WIMAX is the new technology. This network should be reached up to 15 to 20km.

Keywords— WI-FI; WIMAX; wireless network; AES

1. Introduction

Wireless network are creation of Computer communication networks can be sent. This is the most important achievement of the 21st century. The wireless network has gained increased popularity in the course of past decade the hardware has significantly decreased making Wireless network telecommunication engineers and other people who deals with the technical affordable to many individual Organization, aspects of communication.

The basic five components: *Message*: the message is used to communicate. The information between two processes. *Sender*: the sender is the using for the Information should be send. *Receiver*: the receiver is used for the Information should be received. *Medium*: the medium is the connecting the communication between the two Path. *Protocol*: it is the set of the rules and

govern(CSN), ASN, sketch's, mobility support, Authentication wireless local of area network (WLAN or WI-FI) - a trademarked phrased that means IEEE 802.11x).

2. Wireless technologies WI-FI and WIMAX

Wireless networking technology is used for radio waves to provide Wireless high speed internet and network connections. WI-FI works with no physical wired link among sender and recipient. It will be using by the radio Frequency (RF) technology. Here the Frequency should within the ES associated with radio wave propagation. The wireless adapter translates data into a radio signal and it will transmits by using an antenna. The WI-FI Transmits 2.4GHZ or 5GHZ. Then it will handle 54bits per seconds. WIMAX operates both licensed and Non-licensed frequencies. And economic model for wireless carriers. WIMAX can be providing the wireless option cable and DSL. For the “last mile” To broad band price.

3. Working of WI-FI

If you've been in an airport, coffee shop, library or shopping mall recently, chances you're in the middle of wireless network. Now a days many of the members are also using wireless networking, are also called WI-FI IEEE 802.11 networking, to connect the their mobile phones, computers and some cities are trying to use this technology to provide low-cost Internet access to residents. In next few years, wireless networking may become so widespread that you can be access the Internet just about anywhere without using wires.

4. Working of WIMAX

WIMAX is a wireless digital communications system is known as IEEE 802.16 that is planned for wireless LAN. It is fixed as the some of the network provided the town in the cities. WIMAX can be the network should be reached up to 50 km for static stations, and 5 - 15 km for mobile stations. In contrast, the WI-FI /802.11 wireless local area network standard having the limited network access the 100 meter to 300 meter compare With WIMAX the WI-FI are having low distance but WI-FI like that data rates are easily

supported in the WIMAX operates on the both licensed and non-licensed frequencies, providing a regulated situation and viable economic model for wireless carriers. WIMAX is used for the wireless networking same way as the more common WI-FI protocol. WIMAX is the II gen protocol that allows for more efficient bandwidth. WIMAX are having the high data rates and also having long distance.

5. Proxy Server

WI-FI use as a radio frequency to Radio frequency to transmit data. Any user with a trans receiver can cannot to the network, not properly secured. Use of the mobile Networking is an risk and 60%.of these are unsecured risk of external Threat is very high. A proxy server acts as a intermediary between websites and web browser. A proxy server act as a middle mass between two networks system behind the server, and to speed available bandwidth is at a premium Data, but to changes there are many potential uses.

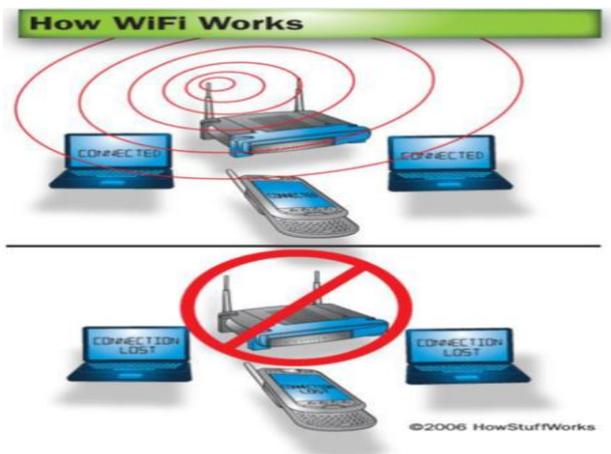


Fig.1: wireless router multiple devices to connect to the Internet

5.1 Forward Proxy

A forward proxy server taken request from the internal network and it should forwarding to an internet.

5.2 Reverse Proxy

The reverse proxy taking request from Internet and forwards them to the servers in a domestic network. Those creation necessities join to the proxy server and may not be aware of the internal network.

6. Comparison of WIFI and WIMAX

- The WIMAX network is to establish network service providers. and alsoused in LAN

- WIMAX network executed a connection oriented should be MAC while Wi-Fi runs on the CSMA/CA protocol, which is wireless and strife based
- WIMAX is faster than the Wi-Fi, because the type is connection in that area.
- The major similarity of the WIMAX and Wi-Fi is speed and remoteness of a network
- The QOS is the both the networks are simple and reliable.

Table.1: Comparison of Wi-Fi and WIMAX

WI-FI	WIMAX
Connection oriented	Connectionless oriented
Limited area	Depended upon network establishment
802.11b,802.11a,802.11g 802.11n	802.16
Less bandwidth	Medium bandwidth
Limited access point	No access here
Connection should be reliable	Unreliable

7. Disadvantage of WI-FI and WIMAX:

- Security.
- Range.
- Reliability.
- Longer connection.
- Multiple frequencies.
- Big installation and operational cost

8. Methodology

Here they existed system WI-FI can be less secure than wired connection WI-FI Access guidelines typically skirting to an encryption –free (open) mode It has a limit range for 250 meter Protocol has not given 100% security For the data. Here my proposed system are WIMAX And WI-FI are both wireless technologies But WI-FI can be operated in short ranges(MAX 250m) and WIMAX could be operated in long ranges (around 30km) Access technology for the high speed access. The integrity of over the air control messages is the protected by using message digest schemes, such as AES based.

Here we are going to used” AES” algorithm The AES(advanced standard encryption) AES is used by U.S government to protect the data. It is implemented in the

software and hardware. Throughout the world to encrypt the data. AES is an iterative rather than feistily cipher it is based on the substitution- Permutation network.

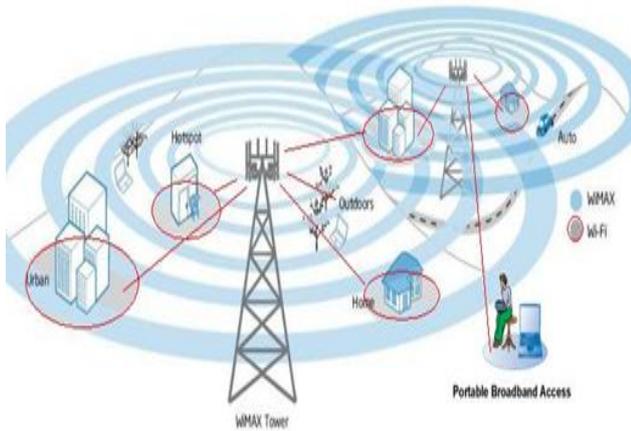


Fig.2: wimax broadband radio frequency of WI-FI

AES encryption consist of 10 rounds of processing for consist of 10 rounds of processing for 128-bits key,12 rounds for 192-bits key and 14 rounds for 256-bits keys. By using AES algorithm we can protect the information here the network should be the pass the air interface.This AES to protect the information through the sending and receiving the data by using this encryption method. User data is encrypted using the cryptographic schemes of proven robustness to provide privacy.

9. Future works

AES algorithm using encrypting the data is not easily to break the key. In RSA algorithm is most effect and protect the data.

10. Conclusion

In this paper we used AES algorithm by encrypting the data. It is not also easily to Broke the key. In the RSA algorithm is most Effect and protect the data we include the AES to the WIMAX technology. We product the information This AES is an encrypt the data through the airway. Securely to transfer the data.

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