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Fauvist Addressability Pattern over Wimax Network

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Abstract
Worldwide Interoperability for Micro wave access (WIMAX) is an 802.16 wireless communication standard that provides high speed, throughput and cover larger area. The entertainers of addressing are one of most importance released of Internet development besides quality of service support, IEEE 802.16 standard offer data rate up to 100mbps and cover area up to 50km. The QOS of high speed data transfer with high quality relying on to addressing is being showing in this article.
Keywords: *Wimax, IEEE802.16, IPv4, IPv6.*

I. Introduction

IEEE 802.16 is a series of wireless broadband standards written by the Institute of Electrical and Electronics Engineers (IEEE). The IEEE Standards Board established a working group in 1999 to develop standards for broadband for wireless metropolitan area networks and supporting the tow type of addressing standards [1]. IEEE 802.18 is a series of wireless broadband standards written by the Institute of Electrical and Electronics Technicians (IEEE). The IEEE Requirements Board established a working group in 1999 to produce standards for broadband for wireless metropolitan area systems and supporting the tow line type of addressing criteria [1].

A. History

IPV4: IPv4 was the first version of Net Protocol to be extensively used, and accounts for almost all of today's Internet traffic. There are approximately 4 billion IPv4 addresses. Whilst that is a whole lot of IP addresses, it is not enough to last forever. IPV6: is a newer numbering system that gives a much bigger address pool than IPv4, among other features. This was deployed it occurred in 1999 and should meet the world's IP addressing needs well ahead 6171, the scribed IP address space exhaustion mitigation techniques, each with their own draw backs. These techniques were only short-term alternatives to delay exhaustion, while more tangible provided in IPv6.

B: Compare between IPv4 and IPv6

IPv4	**IPv6**
Deployed 1981	Deployed 1999
address in 32 bits	address in 128 bits
Address Shortages: IPv4 supports 4.3×109 (4.3 billion) addresses, which is inadequate to give one (or more if they possess more than one device) to every living person.	Larger address space: IPv6 supports 3.4×1038 addresses, or 5×1028(50 octillion) for each of the roughly 6.5 billion people alive today.33(*)
IPv4 header has 20 bytes IPv4 header has many fields (13 fields)	IPv6 header is the double, it has 40 bytes IPv6 header has fewer fields, it has 8 fields.
IPv4 is subdivided into classes <A-E>.	IPv6 is classless. IPv6 uses a prefix and an Identifier ID known as IPv4 network

IPv4 address uses a subnet mask.	IPv6 uses a prefix length.
IPv4 has lack of security. IPv4 was never designed to be secure - Originally designed for an isolated military network - Then adapted for a public educational & research network	IPv6 has a built-in strong security - Encryption - Authentication
ISP have IPv4 connectivity or have both IPv4 and IPv6	Many ISP don't have IPv6 connectivity
Non equal geographical distribution (>50% USA)	No geographic limitation

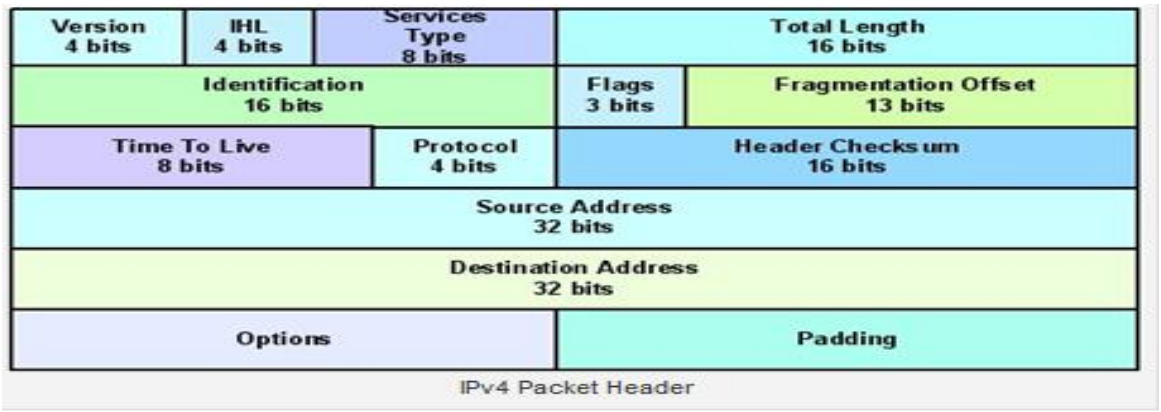

Figure 1: IPv4 Header

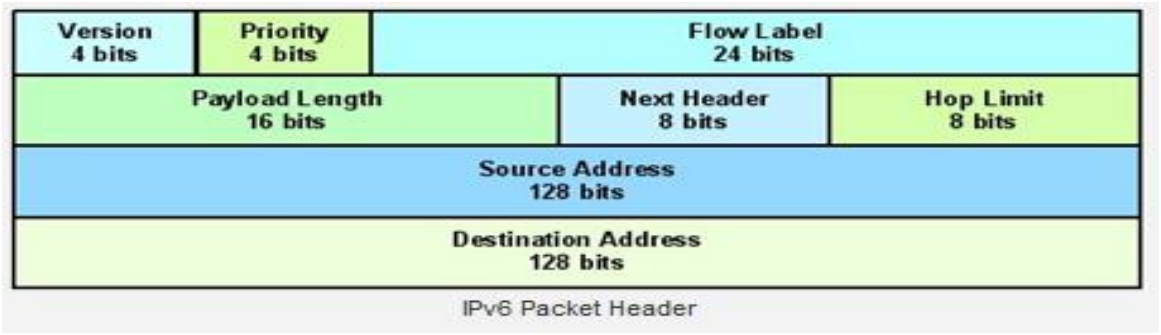

Figure 2: IPv6 Header

2. Strategy

OPNET 14.5 is using to simulate two different responding to versions (IPV4&IPV6) to examination the traffic in wimax network, four parameters (Delay, Throughput, Packet dropped, and Retransmission) has thought to clarify the QOS.

3. Network configuration

This section discusses network components used on wimax network models running on OPNET 14.5: -

1. Wimax BS.
2. (5) work station.
3. Server (Internet).
4. Appling a heavy programs Exe (HTTP, FTP, Online video conferences to clarify identifies various parameters for the several of addressing.

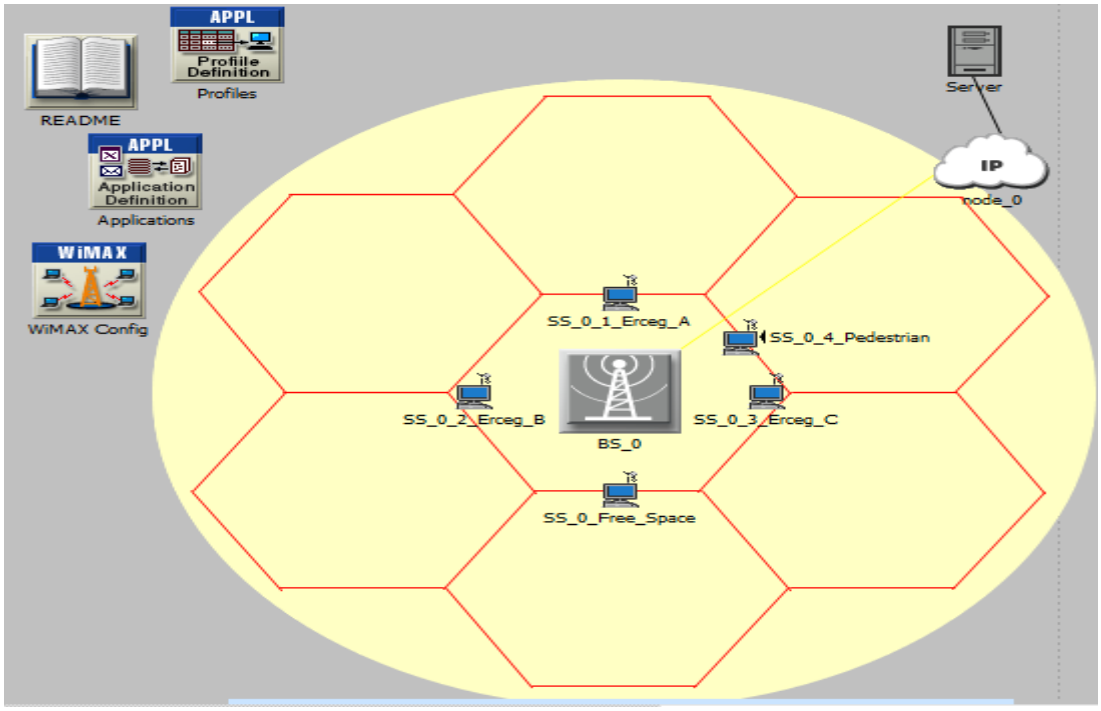

Figure 3: Network IPv4

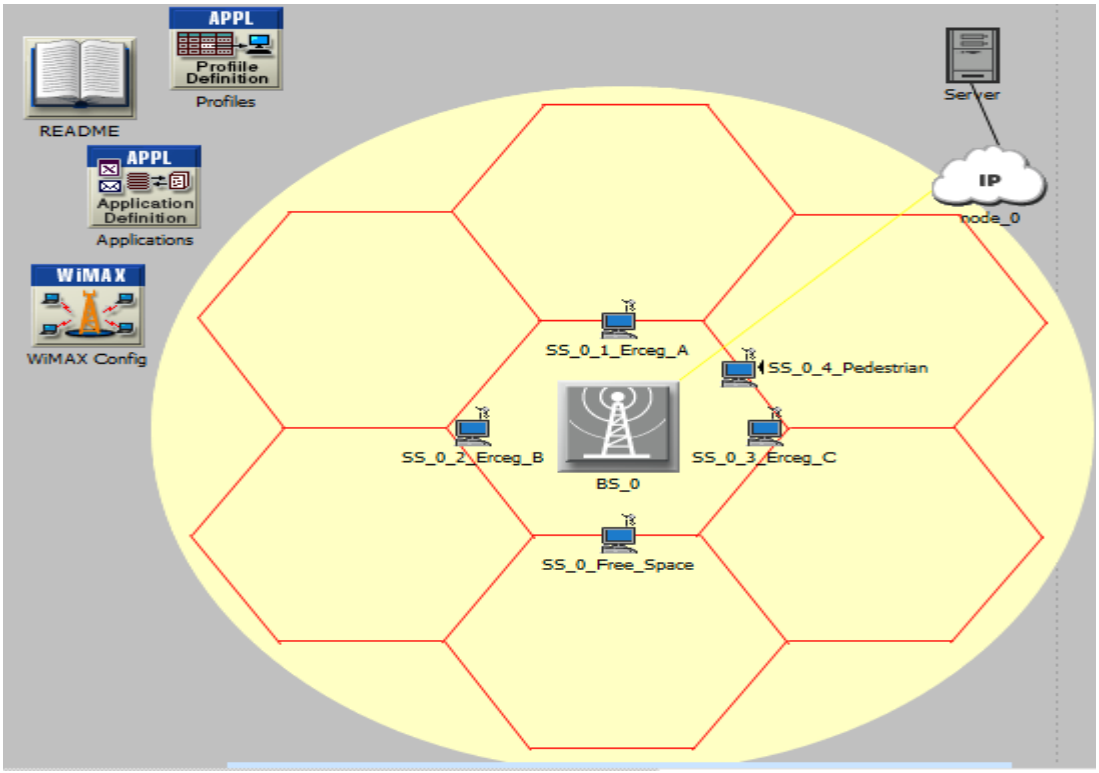

Figure 4: Network IPv6

4. Results and Analysis

The ruse run for 10 Minutes (600 sec): this time had been enough to achieve an overview of the proposed network behavior.

4-1 Delay:

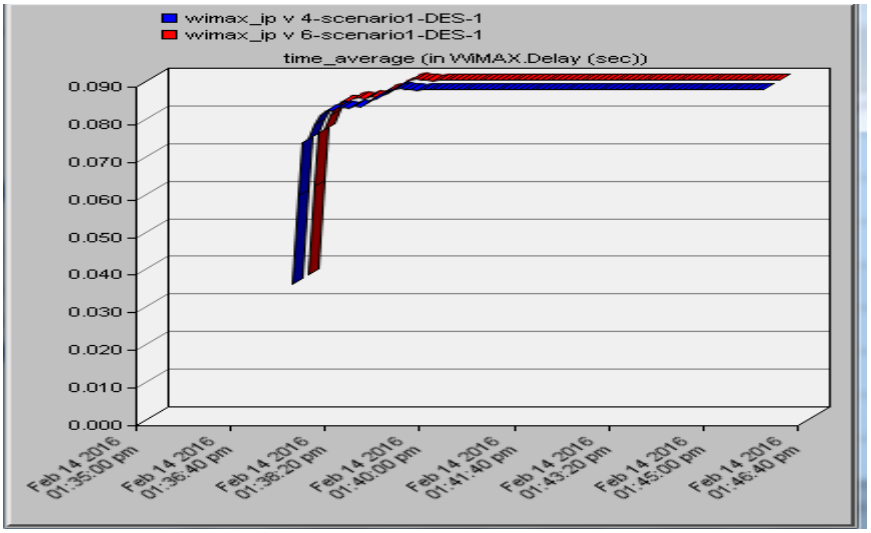

Figure 5: Shows that IPV6 have higher delay than IPv4

Figure 5 excretion that IPV6 have higher delay than IPV4, near zero .09 m sec, which show that when using IPV6 addressing result performance will be with high supply delay with reason the header packet length in IPV6(40 bytes) is far more much longer than IPV4 (20 bytes).

4-2 Throughput:

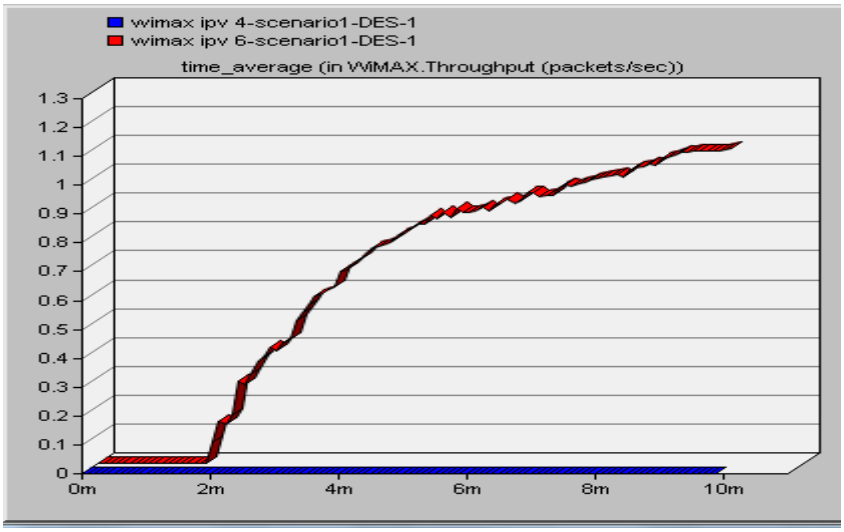

Figure 6: Shows that IPV6 have very best throughput compare to the IPV4

Fig 6 excretion that IPV6 have very best throughput compare to the IPV4, due bay insert size (16 bits) IPV6 has better performance.

4.3 Packet Dropped:

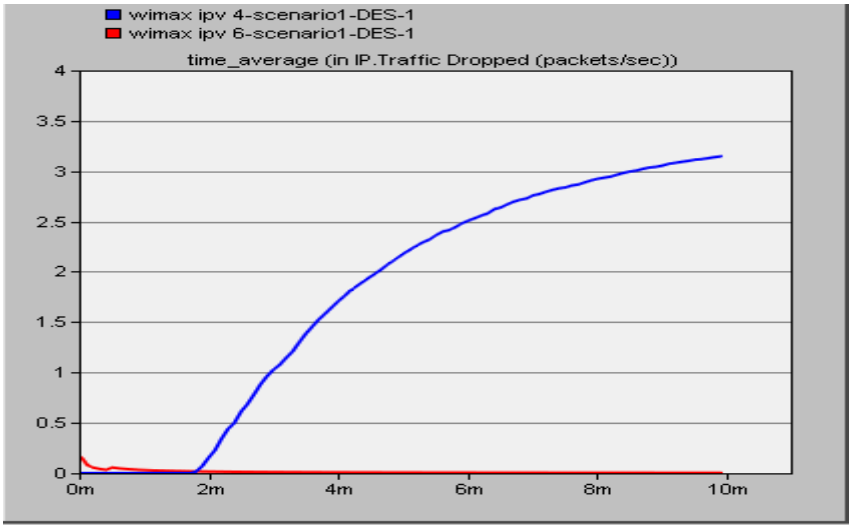

Figure 7: Shows that the IPV6 have a good artist than IPV4

Fig 7 excretion that the IPV6 have a good artist than IPV4 due reinvention fields (flow label & next header) in the IPV6 header.

4.4 Retransmission:

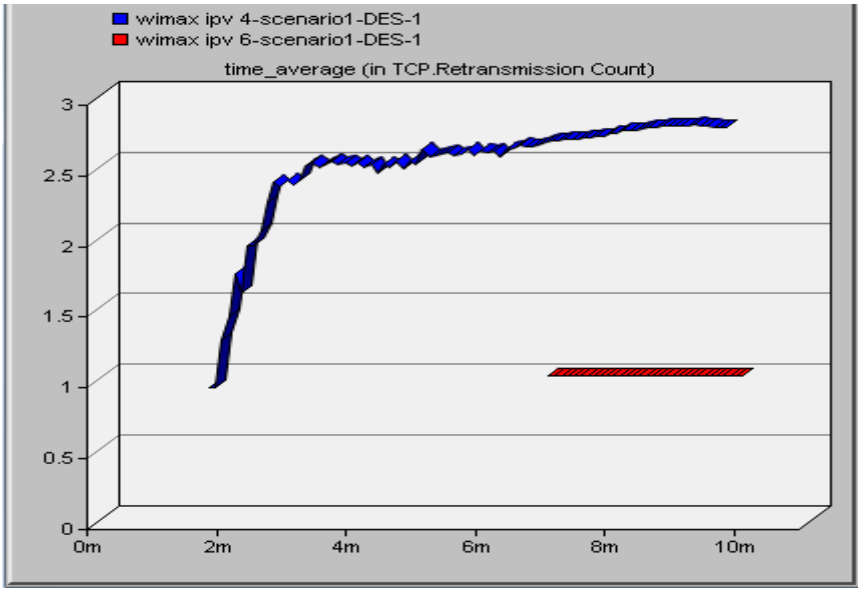

Fig 8: Shows that IPV4 have a higher retransmit packet than IPV6

Fig 8 excretion that the IPV4 have a higher retransmit packet than IPV6 due reinvention land (flow label & next header) who undercount bundle drop conclusion packet damage in the IPV6.

5. Conclusion

Simulation is gone over OPNET14.5 tool, and four types of KPIs (Delay, Throughput Supply drop and Retransmission) have been considered, IPV6 have greatest throughput however endures conclusion to conclusion hold up, although IPV4 have most affordable throughput than IPV6 but particularize by the best wait, So, it is better to work with IPV6 in applications that required high bandwidth, whilst it not suited to real time applications due to the higher delay.

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