

ABSTRACT

In the development of telecommunication technology, Voice over Internet Protocol (VoIP) is nothing matter that can you ignored. Internet Protocol (IP) as a main internet infrastructure and computer networks have been growing until this time. Because of that IP or IPv4 had difficulties in address allocated that predicted will be used up in few years later. To anticipate this problem, IPv6 a new set protocol was proposed by some internet group to replace IPv4. IPv6 has bigger space for address allocated, as much 2^{128} bit and also other advantages. But, does IPv6 can replace IPv4 in voice communication? And does transition condition IPv4/IPv6 can be handled?

In this research, had been done some analysis of parameter quality voice factor on IPv6 network and transition of IPv4/IPv6 (as a backbone), such as delay, jitter, and packet loss factor. For tested this parameters, writer design network topologies which including VoIP network entity based on Session Initiation Protocol (SIP). To know IPv6 performance, writer also compares it with IPv4.

From varying test scenarios, generally, voice quality in IPv6 and transition IPv4/IPv6 – 6to4 tunneling was categorized in good enough for background traffic scenarios ≤ 10 Mbps. Even in special case, IPv6 can make voice quality as good as IPv4.