

## ABSTRACT

IP (Internet Protocol) is one of TCP/IP model layer references that has important roles in developing of a network. As we know, Internet Protocol which is often used in networks or internet is IPv4 (IP version 4). But in a few this decades, the developing of networks is improved rapidly. The application of IPv4 is not relevant anymore because the space address of IPv4 is limited and there are a lot of features provided by network of IPv6 (IP version 6), considered as the next generation of IPv4, that is consciously designed to cover up a shortcoming of previous version.

The direct infrastructure replacement in all of IPV4 networks into IPV6 can not be done rapidly because of a few things, so we need a transition mechanism. The mechanism which is usually used is *tunneling* model. At the implementation of it, there are a lot of *tunneling* transition mechanisms that are used, such as 6to4, configure *tunneling*, and ISATAP. ISATAP (Intra-Site Automatic *Tunnel* Addressing Protocol) is one of Automatic *Tunneling* transition mechanisms that is often used. The using of *tunneling* mechanism as transition mechanism of IPv6 gives an effect in networking performances. Beside that, the ease of implementation also becomes very important factor in a transition process of IPv4 into IPv6. On this final project, we will analyze a differences between mechanisme transition of 6to4,configuring tunneling and ISATAP from the easy side of setup system, the easy of infrastructure, the mechanisme of address, and the performances system

The using of ISATAP as replacement transition mechanism of 6to4 as well as Configured *Tunneling* is much needed because of several things. First, the ease in implementation. Second, the difference of networking performances is not too significant, that is the differences of throughput are 0.88% (6to4) and 1.15% (configured Tunneling). Third, the using of *tunneling* mechanism, such as ISATAP, can decrease a system performance compared with using a pre networking of IPv4 , that is the decreasing of throughput HTTP and FTP are 6.38% and 7.10%.

Keywords: Internet Protocol, transition mechanism, *tunneling*, 6to4, Configured *Tunneling*, ISATAP.