ABSTRACT

Internet network on the early used of TCP/IP protocol widely was still relatively small, slow and simple. With the growth of the technology, number of network and node that used internet connection has been increased rapidly.

Limitation of available IP Address and the current version of IP make IETF (Internet Engineering Task Force) release new protocol standard called IPng (Internet Protocol Next Generation) which more familiar with IPv6 name.

Problems occurs when IPv6 only host cannot communicate directly with IPv4 only host and vice versa. Most IPv4 application would not working in IPv6 platform. During IPv6 implementation, some IPv6 host must always connect with IPv4 only host or work with IPv4-based-application. Some IPv4 to IPv6 transition mechanism have been implemented to answer this situation, such as Tunneling, Protocol Translation and Dual Stack.

Dual Stack Transition Mechanism (DSTM) provide a method that allow IPv4 host to communicate with IPv6 host and vice versa. This system use IPv4-over-IPv6 Tunneling.

This paper will show how DSTM work, DSTM implementation , connectivity test between IPv6 and IPv4 network and network performance testing on the system. Early analysis show that some additional time trip value will occurs because of encapsulation and decapsulation process. For further study , transition mechanism with fewer delay process is something need to deal with to accomplished the global transition from IPv4 to IPv6.