Abstract

Free IPv4 address allocation is getting decrease while the Internet and the required IP address of network are getting increase exponentially, until IPv6 was defined to overcome the limitation of IPv4. The transition mechanism is the most important thing during the transition time from IPv4 to IPv6 and of course it can not be done instantly. Dual Stack Transition Mechanism (DSTM) is one of the IPv6 transition mechanisms to connect the IPv6 network-only and the IPv4 network-only.

DSTM is based on the use of IPv4-over-IPv6 tunnels to carry IPv4 traffic within an IPv6 network and provides a method to allocate a temporary IPv4 address to Dual IP Layer IPv6/IPv4 capable nodes. DSTM is specially designed for IPv6 dominant network which do not have any access to communicate with IPv4 but its application still require the IPv4 device compatibility. DSTM is used to transition dual stack network to an overlay network where IPv4 packet are sent over IPv6 network without do any configuration in IPv6 network.

This final project implements and analyzes the performance of DSTM to access IPv4 network services. DSTM can be implemented with simple configuration. As a whole, DSTM has good enough performance and little overhead although the process initiation delay at real time traffic is high.

Keyword: IPv6, DSTM, transition mechanism, performance