

## **ABSTRACT**

The process of the overall IPv6 migration needs readiness of all, such as user, network provider, and service provider. User needs networks that can link user itself to the internet in IPv6 and devices that support IPv6. Network provider could be linking each network in IPv6. And for the service provider, it should be provide the services that support IPv6. It is hard to realize for all, especially for the network provider and service provider. To support the transition process of IPv4 to IPv6 can use translation method; this method is NAT64/DNS64.

This final project was created for testing and analyzing of NAT64/DNS64 method in interconnection network between IPv6 client and IPv4 server. Client would access services from server. The services that would be accessed use these protocols: HTTP, FTP, SMTP, POP3, TELNET, and SSH. Then for the testing, RTT and processing time should be tested for these protocols and analyzing of header differences.

After testing of the protocols, the result of the testing is that all six tested protocols can manage the NAT64 process. So that IPv6 client can access services that provide by IPv4 server. The result for header comparison is that NAT64 process only transform header of network layer protocols. NAT64 does not modify the information that contain in application layer protocol's header. The result of processing time test show that NAT64 topology needs more time for processing than native IPv4 and native IPv6 topology. But this result, the amount of processing time does not affect for the RTT.

**Keyword:** NAT64, DNS64, Protocols, Application Layer, RTT, Processing Time