ABSTRACT

With a rapid growth in wireless technology in recent years, Mobile IP has become very important for consumers and businesses by providing mobility based on IP addresses using several applications, which keep the employees connected with each others with critical information. In mobile IP the node can change its location by maintaining the same IP address and keep connected to the internet, which solves the issue of terminating the communication once it moves.

Since Mobile IP uses open airwaves as a transmission medium, it is subject to the many security threats that are routed in mobile IP network .Protecting mobile IP from threats and attacks is one of the most challenging task now days. IPSec is a standard security protocol solution for TCP/IP network that provides security through Authentication, Encryption and data integrity services. Mobile IP data traffic can be secured by combining with IP Security (IPSec) protocol.

This thesis describes Mobile IP operations, security threats, different existing methods for securing mobile IP and then IPSec standard, how it works and why IPSec is the best solution. This thesis also describes how to combine IPSec with a mobile IP to provide a solution called (SecMIP) that protects the mobile device's communication from any threats. Finally it describes Mobile IPv6, binding update and associated security concern.