

It is often debated whether IPv6 brings better security to networking. Initially, it was conceived, that since IPSec is mandatory in IPv6, it automatically means security. However, the situation is not that straightforward. IPSec is neither as universal, nor as flexible as it was hoped. There are several subtle differences between the old and the new protocol. The paper describes the differences between IPv4 and IPv6 from a security viewpoint. Using risk-analysis, new features of IPv6 such as addressing architecture, autoconfiguration, new datagram structure and so on are compared to IPv4's solutions. Those points are shown where there is a difference in security. Some of these are the size and structure of the address space, which influence surveillance of autoconfiguration and Neighbor Discovery, which can be attacked in several ways.

It can not be said that IPv6 is definitely more secure than IPv4, but by evaluating part-by-part comparison may be done. Considering the state of the implementations, it is expected that on the long term, IPv6 can be considered more secure than IPv4.