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Layered security design for mobile ad hoc networks

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Abstract

When security of a given network architecture is not properly designed from the beginning, it is difficult to preserve confidentiality, authenticity, integrity and non-repudiation in practical networks. Unlike traditional mobile wireless networks, ad hoc networks rely on individual nodes to keep all the necessary interconnections alive. In this article we investigate the principal security issues for protecting mobile ad hoc networks at the data link and network layers. The security requirements for these two layers are identified and the design criteria for creating secure ad hoc networks using multiple lines of defence against malicious attacks are discussed.

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Keywords

Mobile ad hoc networks; Security; Link and network layers; Authentication; Security protocols

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