Secure Mobile Systems

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Abstract

Survivability and secure communications are essential in a mobile computing environment. We propose to conduct a series of experiments that will lead to the development of new authentication and key management techniques for wireless Communications. We study the implementation of various authentication schemes on the overall system performance. We propose a technique to achieve fault-tolerant mobile node authentication in an efficient way. We plan to identify guidelines for authentication between an upstream domain and a DiffServ ingress router in a QoS enabled network. We will evaluate how various secure group communication and access control techniques fit into the wireless world by conducting scientific experiments in a systematic way. We will solve the problem of providing secure multimedia communication under mobile environments where the resources available to mobile hosts such as CPU power and network bandwidth are very limited. We have developed a series of light-weight video encryption algorithms which encompass video compression and video encryption in one step. This will lead toward an adaptable encryption system.