

网络、通信、安全

基于免疫和多Agent的RFID入侵检测模型研究

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摘要 针对无线射频识别技术(RFID)的加密认证等安全策略在廉价标签上的局限性,引入了入侵检测的RFID新型安全策略。通过分析RFID系统的典型安全攻击,提出了基于信道日志和应用日志融合统计的入侵特征提取方法。参考生物免疫机理建立了RFID入侵检测模型多Agent体系结构,参考免疫耐受原理设计了检测器生成Agent BDI模型,参考层次防御和免疫记忆设计了检测Agent BDI模型。最后分析了模型的多层次性、自适应性和健壮性。

关键词 [射频识别](#) [入侵检测](#) [免疫](#) [Agent](#)

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Study on intrusion detection model for RFID system based on immune and multi-Agent

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Abstract

It is very hard to develop encryption technology used in cheap RFID (Radio Frequency Identification) tags. In this paper, intrusion detection, as a new methodology, is adopted to create security model for RFID system. By analyzing typically security attacks on RFID systems, a solution to get characters of intrusion by integration and statistics of channel log and application log is proposed. A multi-agent structure of RFID intrusion detection is designed based on biological immune mechanism. A BDI model of detector produce agent is designed based on immune tolerance. A BDI model of detecting agent is designed based on multilevel defense and immune memory. At last, multilevel, adaptability and robustness of the model are analyzed.

Key words [Radio Frequency Identification \(RFID\)](#) [intrusion detection](#) [immune](#) [Agent](#)

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