

网络、通信、安全

## 网络安全态势IAHP量化评估方法

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**摘要** 从攻击和防御两个角度出发提出了一种基于IAHP的网络安全态势量化评估方法, 建立了多层次多角度网络安全态势量化评估模型, 并综合考虑攻击威胁和防御机制对服务、主机和网络的影响, 给出了相应的量化计算方法, 同时提出了一种一致性自动修正算法, 判断修正不满足一致性要求的矩阵, 获得满足实际需求的权值, 并将其运用到所提出的评估模型中。实验结果表明, 该方法能够有效地评估服务、主机和网络的安全态势。

**关键词** [网络安全态势](#) [改进的层次分析法 \(IAHP\)](#) [多层次多角度](#) [量化评估](#)

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## IAHP method of quantificational evaluation of network security situation

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### Abstract

From the views of attack and defense, a quantificational evaluation method of network security situation based on IAHP is proposed. A multi-level and multi-perspective quantificational evaluation model is established. By comprehensively considering the impacts of attack threats and defense mechanisms to services, hosts and local networks, the quantificational calculation method is given. At the same time a consistency tuning automatic algorithm is studied, which automatically judges and tunes interval matrix while there is inconsistency, and inputs the appropriate weights that are directly used to network security situation quantitative evaluation model. Experimental results show that the proposed evaluation method can effectively evaluate the network security situation in service-level, host-level and network-level.

**Key words** [network security situation](#) [Improved Analytic Hierarchy Process \(IAHP\)](#) [multi-level multi-perspective](#) [quantificational evaluation](#)

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