Increased Accuracy in Blockchain-Based Intrusion Detection and Prevention System

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Abstract

Intrusion Detection and Prevention (IDPS) is a critical cybersecurity task that involves monitoring network traffic for malicious activity and taking appropriate action to stop it. However, insufficient training data or improperly chosen thresholds often limit the accuracy of such systems, resulting in high false positive rates. To improve the accuracy of an IDPS, blockchain technology can be used. Blockchain technology provides a secure, decentralized, immutable ledger that can track suspicious activity over time and identify intrusions globally. Security teams can use blockchain technology to create immutable records of suspicious activity, give users visibility into the system, and improve the accuracy of intrusion detection systems. In this paper, we propose a novel methodology to improve the accuracy of blockchain-based intrusion detection and prevention systems, which is based on combining different intrusion detection algorithms and using a blockchain-integrated architecture. Our experimental results show that the proposed system significantly increases the accuracy while reducing the false positive rate, opening up new opportunities for the development of highly accurate networks.

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