Event Evaluation and Trust Management in Fog Computing Architecture

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Résumé

Event trustworthiness is an important factor that influences every entity in fog computing systems. This raises many security concerns regarding the reliability of the events shared between fog nodes and data sources. Indeed, malicious entities may provide inaccurate or modified information to mislead honest ones and influence their behavior. %requiring
To avoid these situations, robust information trust assessment and management mechanisms are required. Therefore, in this paper, we present a new Blockchain-based solution to evaluate event trustworthiness in fog computing architecture. Our solution creates a transparent and traceable environment, allowing for the preservation of trust scores and fostering accountability. Moreover, it presents a new trust model calculating event trustworthiness based on multiple factors such as the plausibility of the event, its temporal relevance, and its distance relevance. As a result, malicious entities can be identified and trustworthy behavior can be encouraged in the fog computing environment. Finally, we prove that our protocol is highly effective, as demonstrated by comprehensive simulations.

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