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Trace Network: A Probabilistic Relevant Pattern Recognition Approach to Attribution Trace Analysis

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Abstract : Network attack prevention is a critical research area of information security. Network attack would be oppressed if attribution techniques are capable to trace back to the attackers after the hacking event. Therefore attributing these attacks to a particular identification becomes one of the important tasks when analysts attempt to differentiate and profile the attacker behind a piece of attack trace. To assist analysts in expose attackers behind the scenes, this paper researches on the connections between attribution traces and proposes probabilistic relevance based attribution patterns. This method facilitates the evaluation of the plausibility relevance between different traceable identifications. Furthermore, through analyzing the connections among traces, it could confirm the existence probability of a certain organization as well as discover its affinitive partners by the means of drawing relevance matrix from attribution traces.

Keywords : attribution trace, probabilistic relevance, network attack, attacker identification
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