

Developing SIEM and Log Management for Automotive Network in a Simulated Environment

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Abstract:
Modern vehicles' increasing connectivity and complexity have made them susceptible to various cyber threats. To address this, Security Information and Event Management systems (SIEM), commonly used in IT environments, are being adapted for the automotive domain. This paper presents an approach for implementing a SIEM system within a simulated au-tomotive network. Our implementation focuses on the Controller Area Network (CAN) bus communication protocol. We simulate interactions between Electronic Control Units (ECUs) using the Unified Diagnostic Services (UDS) protocol to implement a security mechanism to protect defined services. By forwarding communication traffic to a cloud-based SIEM system, we analyze real-time data to detect anomalies and potential security breaches. This work lays the groundwork for our research in the domain of Vehicle Security Operation Center (V-SOC), and the SIEM solution for connected vehicles.

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