Design a Cloud Security Model in VANET Communication: Design and Architecture

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Abstract

During the last few years, Intelligent Transportation System (ITS) has been progressed at a rapid rate, which aimed to improve the transportation activities in the terms of the safety and efficiency. According to many issues with the traditional Vehicular Ad-Hoc Networks (VANET), some efforts are made to merge the VANET with the cloud technology. This work proposes the VANET based on the cloud (V2Cloud), and designs a security model framework that is hosted on the cloud to manage the security services, and provide a secure VANET communication between the different entities e.g. vehicles, authorities and etc. This security model framework is called VANET Security as a Service (VSaaS).

Our works will presented in a set of two papers. In this first one, it presents VSaaS design and architecture in order to show that the VSaaS fulfills the VANET's security requirements, and protects the VANET against the different types of attacks. The second paper will present the progress towards the implementation and the security analysis of the proposed architecture, along with the results of the performance of the security overhead for the secure Vehicle
Information Messages (VIMs), which are sent by vehicles to the cloud as a coarse-grained information.

References

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Workshop, 2005.


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Index Terms

Computer Science

Security
Keywords

VANET, Cloud, VSaaS, Certified Authority, Cryptography, Vehicle Information Messages, Traffic Information Messages, Authentication, Privacy, Security Overhead