

Mitigating Security Issues in the Internet of Things

Mobility Forensics

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SCIENCE OF SECURITY
VIRTUAL ORGANIZATION

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Motivation

- The Internet of Things (IOT) is the notion that all objects and devices will be connected to the Internet in a new digital age.
- In order to stop future nationwide attacks, the network of the Internet of Things has to be secure.
- User-perceptions may be essential to the future of the IOT

Security Architecture of the Internet of Things

- The security of the IOT has no specific structure due to freshness and recent popularity of this issue
- Referencing related areas such as the Internet, sensor networks, and mobile communications a solid foundation can be used until further evidence is found.

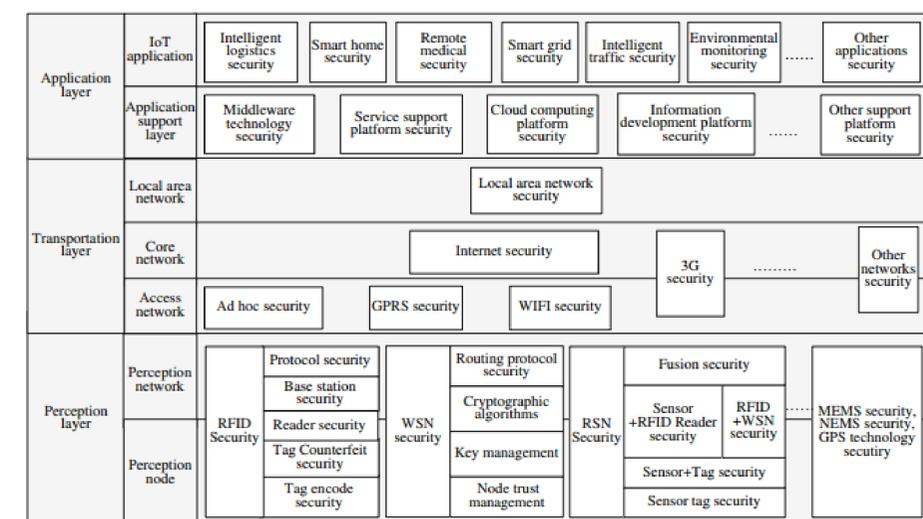


Fig. 1 Security architecture

Goals

- To understand the users of the IOT and their perceptions on interconnected devices
- Use survey results to discover the actions of daily interconnected device users
- Use the survey results to interpret users and improve on further research

References

- Lu, J., Qi, J., Qiu, D., Vasilakos, A.V., Wan, J. 2014. Security in the Internet of Things: perspectives and challenges. DOI = <http://link.springer.com/article/10.1007/s11276-014-0761-7>

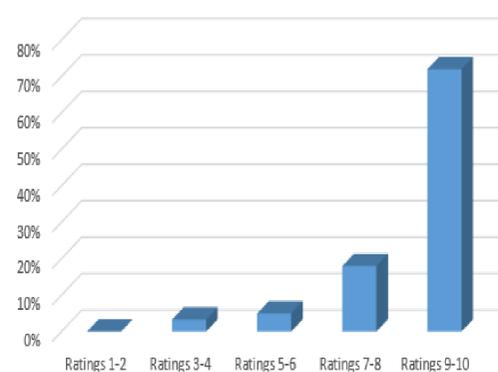
Methodology

- Survey was developed with 22 questions from multiple Midwestern towns pertaining to Wi-Fi, the degrees of importance between privacy and protection, and demographic questions
- Used the results to find connections between users and the possible vulnerabilities in the IOT security architecture

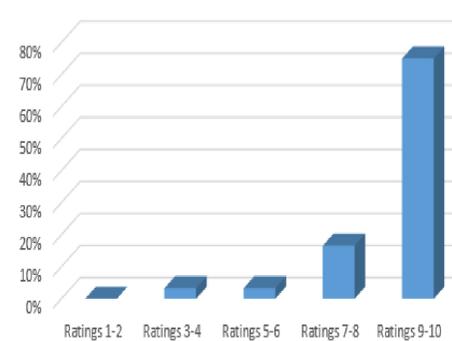
Survey Findings

- As shown in the diagrams below, participants rated the importance of their privacy, information protection, and security of their devices on a scale of 1 to 10

Importance of Privacy on Interconnected Devices



Importance of Information Protection on interconnected devices

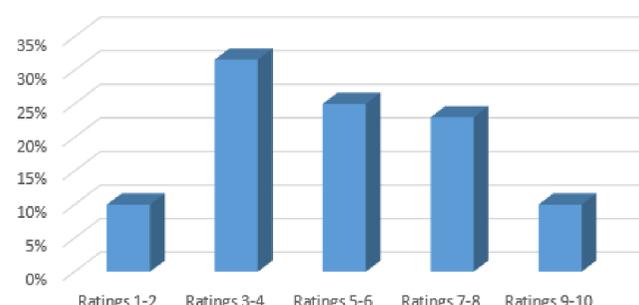


Scale:
1- Not at all important
10- Very Important

Standard Deviation: 26.912

Standard Deviation: 28.262

How well do you think your devices are protected?



Scale:
1- The worst
2- The best

Standard Deviation: 8.695

Future Work

- Expand to other geographical areas in order to collect more surveys
- Find explanations for survey results and go more in depth with user-perspectives
- Continue literature reviews

Acknowledgements

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