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Securing Home Networks, Utilizing Smart Technology

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INTRODUCTION

Smart homes are built up simply by IoT (Internet of Things) devices and wireless sensor devices, that are implemented in smaller environments like someone's home. They are used in households to improve physical security and make life easier for its residents, unfortunately devices that improve ease of life are not logically secure. Security in any respect is becoming more and more important to everyone, as the number of devices increase the number of possible intruders rise; either being physical or logical threats to the residence.

AIMS OF THE PROJECT

The aim of this project is to create a building standard using smart technology, while making sure the home is fully secured. Most smart devices that can be bought, for example amazon echo, are not very secure and can easily be hacked into, with the right set of skills. As Amazon Echo is constantly listening, intruders can use this feature to their advantage to collect data from the household, including passwords, bank details and even private information which could lead to blackmail.

OBJECTIVES OF THE PROJECT

1. Research possible security vulnerabilities in Smart Tech.

2. Test using Wireshark & Metapoliatable in Kali Linux for vulnerabilities researched.

3. Identify vulnerabilities in Smart Technology for possibly improvement.

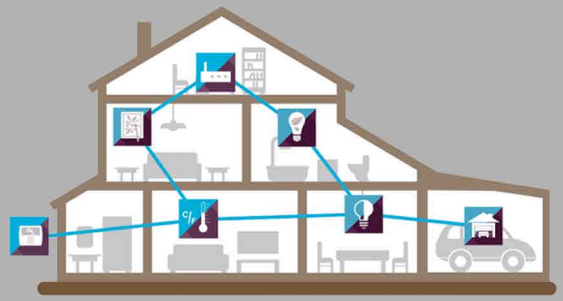


Fig 1. An example of a typical Smart Home and its Smart Devices. [1]

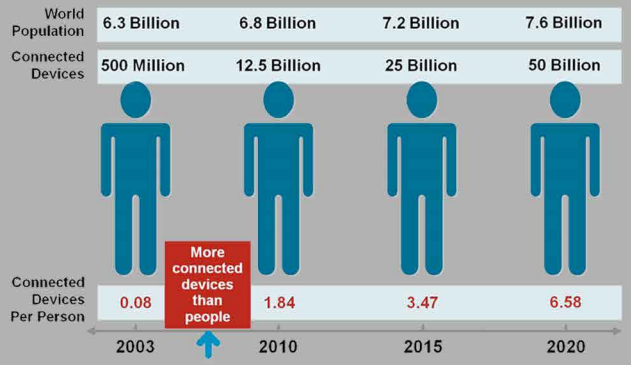


Fig 2. A timeline, showing Smart Devices from 2003 to 2020 and how there are now more devices than people. [2]

RESULTS

This project will mostly be research with some implementation using software. Wireshark, to monitor traffic on the network and Kali Linux's Metasploitable program, to exploit and penetrate test devices security. This method will be used to look for possible vulnerabilities in smart technology. Once the data is collected it will be possible to see what needs to be done to ensure a secure smart home.

REFERENCES

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[5] [4] [3]