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# So You Like The Internet... But Are You Safe?



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## Introduction

Network Security within a home network is often overlooked as people assume that they're safe. This is not always the case. The project looks to analyse the security measures of a typical home network and advise on how to improve them.

So many people use networked devices on a daily basis so security is becoming more and more vital, and the fact criminals can easily break into your network is something that not everyone understands. Cisco stated that cyber security is on the rise and over 2012 malware affecting the phone OS Android grew by 2,577%[1].

## Aims and Objectives

- To build a simulation to represent how much typical traffic is on a home network.
- Analyse the results and expand on the security issues and how they can be fixed.
- To set up a honeypot server and show what malware can do to a network.

Figure 1.



## Why is Security Important?

- Cyber attacks are no longer just restricted to businesses, criminals can also profit from infiltrating a home network by stealing personal data such as bank card information and passwords.
- Home networks are usually less secure than commercial ones so it is vital to also look after your data at home too.
- More and more devices are becoming attached to networks and therefore making it easier for criminals to gain unauthorised access.

## Methodology

- Academic resources and case studies are going to be the main source of the research.
- From this we can get an understanding of how to stop these attacks and develop methods of preventing them.
- Simulation software called QualNet will be used to build a visual representation of a home network.
- This can then be used to be 'attacked' to demonstrate some of the methods criminals use.
- A honeypot server will be set up to capture all connections.
- Malware such as cryptolocker will be deliberately installed to show how a network can be exploited so easily.

## References

Figure 1— [www.techgyd.com/setup-home-network-windows/19172/](http://www.techgyd.com/setup-home-network-windows/19172/)  
[1]. Cisco, "Cisco Annual Security Report: Threats Step Out of the Shadows," 2013.  
[Online]. Available: <https://newsroom.cisco.com/press-release-content?articleId=1133334>.