



FUNCTIONAL SPECIFICATION

The Operating System Security Showdown

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Introduction

This manual will provide what I am going to carry out to devise a result on which Operating System is more secure; Windows 10 or Ubuntu Linux. It is formed in a way that if another being wated to create this project themselves, it is written in the order I carried out the tasks.

I will be comparing the operating systems security with different commands and understanding of the results that are returned.

Project Scope

The scope of this project is to create an end result, either Windows 10 or Linux. It is a security comparison of two highly used and rated operating systems. The deadline of this project is 30th April 2021. This project contains technical and non-technical information, research, and results.

Requirements

Devices: 2

I will use two devices, one with Ubuntu Linux and one with Windows 10. These devices were kindly provided to me from Institute of Technology Carlow. Each device will have the OS installed on a usb and installed from there each time a test is carried out to ensure it is at the original state to get the most accurate results.

Operating System: Ubuntu Linux

Ubuntu Linux is the version of Linux that I will be testing. It is an open-source, free downloadable software that will be installed on a device

Operating System: Windows 10

Windows 10 is the comparison I will be analysing to Linux. It however is not a free OS and does cost unless you are a student. Windows 10 is the latest OS version of Windows

Nmap

Nmap is a port scanning tool that used to scan a host for open ports using an IP address or to detect installed versions. Nmap gives back readable results, and I will be analysing both results for each OS and comparing them. (Shivanandhan, 2021)

Deliverables

Assumptions

From carrying out my project research document, I assume that Ubuntu Linux is the most secure operating system. Linux highly praised on many resources on the web. If I did not research these operating systems, I would be choosing Windows 10 as the most secure OS as it is the OS I have always used and stuck with and never had an issue with it.

Risks

I hope to not come about any issues in this project. I do not think there is any risk of doing this project.

Solution Overview

To state which OS is higher quality in terms of security aspects: Windows 10 or Ubuntu Linux.

System Configurations

The steps for carrying out this project include:

1. Collecting 2 devices from Institute of Technology Carlow
2. Researching both Windows 10 and Ubuntu Linux
3. Researching Nmap and what its commands and results mean
4. Creating a specific set of Nmap commands to carry out on each operating system
5. Carry out these tests, analyse results and complete a comparison

Metrics

Functionality

This project will be a dense testing and comparison of both Operating Systems in every security extent. Users can use the results to choose an OS that suits them.

Usability

I would like the project to be easily interpreted and understood by readers. The documentation will be a great description of each aspect of the project.

Reliability

This project will need to be reliable and give the correct results so it can be used for any user to reference to if they have a query as to which operating system is more secure,

Performance

The performing method in this project is the use of Nmap. Nmap performs the scanning commands and shows us results of what ports are open.

Supportability

This project comparison will allow users to choose the most secure operating system for their device. This is crucial to know because if users are using an operating system that is not secure, then they are open to many vulnerabilities and malicious users.

Precedent for this Project

I discovered with research only that Nmap port scanner is the tool I am going to use for this project. I discovered this in the research manual as it is rated the best port scanner. I also discovered the Python-nmap module that is a library integrated with Python to automate Nmap if I want to automate my nmap commands after the final analysis. This project started in September 2020 and has been an ongoing task since.

References

Shivanandhan, M., 2021. *What is Nmap and How to Use it – A Tutorial for the Greatest Scanning Tool of All Time*. [online] freeCodeCamp.org. Available at: <<https://www.freecodecamp.org/news/what-is-nmap-and-how-to-use-it-a-tutorial-for-the-greatest-scanning-tool-of-all-time/>> [Accessed 30 April 2021].