Deliverable 1

Project description

This project is to create my own media server. Users won't have to go from file to file for media entertainment. Instead, they will have a media center that plays files from a media server. To provide easy access to those who wish to see video and audio content.

Project hardware and software requirements

- storing data/media
- a network connection with enough bandwidth
- 4-8GB of Ram
- 3.2GHz Intel Pentium 4 processor (Dual Intel Xeon or faster)
- Virtual Machine

What is Linux?

An operating system is a fundamental software features for a computer.Linux is like a Unix Operating System, it's popular in academic and business environments. Linux has kernels, libraries, and utilities that make up the entire operating system. Any operating system that runs the Linux kernel has Linux ready and available to use. Some of the most famous Linux distributions are Arch, CentOS, openSUSE, Ubuntu, etc.Linux is available to everyone with no expense whatsoever, it's also an open source.

Linux includes so many of Unix tools, such as internet server programs and programming languages. The majority of the server applications worldwide use different versions of Linux. As well as many businesses and non-profit organizations rely on Linux in order to run their operations, without Linux they would have to find some other way to run it. Any system can install Linux because it supports the majority of every processor architecture.

Short history of linux

Linux has been around since 1991, which makes it 31 years old.

- **Event 1, September 1991:** Linux was first originally called Freax, this stood for Free, Freak, and X for Unix, then changed to Linux.
- **Event 2, 1992:** Linux was relicensed under the GNU GPL
- **Event 2, 1996:** The Linux mascot is a penguin, thanks to Torvalds story about how a little penguin bit him.
- **Event 3, 2000:** The open source development lab was created
- **Event 4, 2002 :** The media reports theat "Microsoft Killed Dell Linux"
- **Event 5, 2004:** the XFree86 team splits up and joins with the existing X standards body to form X.Org Foundation
- **Event 6, 2005:** openSUSE begins a free distribution from Novell's community
- **Event 7, 2007:** Dell starts distributing laptops with Ubuntu pre-installed on them
- **Event 8, 2009:** Red Hat's market capitalization equals Sun's, symbolic moment in the "Linux-based economy"

- **Event 9, 2012:** The Linux server market revenue exceeds the rest of the Unix market
- **Event 10, 2013:** Google's Linux-based Andriod claims 75% of the smartphone market

Linux distribution

- **Slackaware:** Slackware originated from the Softlanding Linux System. It was the first to offer a comprehensive software collection that compromised more than the kernel and basic utilities. Slackware version numbers were behind other distributions which led a lot of people to believe that was out of date. Between November 2013 and June 2016, Slackware had a 31 month old gap between releases, which marked as the longest gap in the Linux release history. Slackware's package management system can administer, install, upgrade, and remove its packages. It can also uncompress and create packages.
- **Debian:** Debian is a GNU/Linux Distribution and it is composed of free and open source software. Debian has access to online repositories that contain just a little over 51,000 packages. Debian is one of the oldest operating system in the Linux Kernel. Debian has also developed and maintained a GNU/Linux operating system for over a decade. Ever since its release, Debian has continued to operate as an all-volunteer organization that provides free open source software. Debian has been used by governments, schools, non-profit organizations, and commercial businesses.

Debian Based Distributions

> Ubuntu: Ubuntu is one of the Linux Distributions, it is available with both community and professional help. The software is free of charge, it can be used in any language and if you have any disabilities as well. People have the freedom to customize and alter anything they'd like on Ubuntu to make it more of themselves. Ubuntu is shipped in stable and regular release cycles. Regular cycles are shipped every 6 months and is supported for 9 months. The long-term support is shipped every 2 years and is supported for 5 years. Ubuntu can run a virtual machine or on any computer alone. Kali Linux: Kali Linux was designed for digital forensics and penetration testing, it has been maintained and funded by the Offensive Security. Kali Linux has more than 600 penetration testing programs such as Armitage, Nmap, Wireshark, and so much more. Kali Linux is based on the Debian **testing** branch, most of the packages that Kali uses are imported from Debian repositories. Mr.Robot is a TV series that featured Kali Linux in some episodes, which made Kali's popularity grow. Kali's developers aim to make Kali Linux available for more ARM devices.

- Red Hat Enterprise Linux Red Hat Enterprise Linux is available at no cost due to development purposes. Just like Fedora, Red Hat Enterprise is an open source. Red Hat originally sold boxed versions of Red Hat Linux to consumers and businesses via phone support. Rebuilds of Red Hat Enterprise Linux is free, but you do not get any commercial support from Red Hat or any certifications either. The life cycle of Red Hat Enterprise Linux lasts 7 years for versions 3 and 4. It spans 10 years for versions 5, 6, 7, and 8.

> Fedora Fedora contains software distributed under many free and open source licenses. A new version of Fedora is released every 6 months just like Ubuntu. Fedora has a very short life cycle, each version is usually supported for 13 months. The users who use Fedora can upgrade versions within each version without having to reinstall anything. Security-Enhanced Linux is set up by default on Fedora, it implements a variety of security policies; including mandatory access controls. Extra repositories can be added to Fedora so that whatever software is not installed in Fedora can be

> installed easily. But, you have to be careful with installing software that isn't in Fedora, it may violate a US law or it won't meet Fedora's definition of free software.

Open Source VS Closed Source

Open source is free to anyone who would like to use it. If you have the source it makes it available easy to use, modify, and distribute. Programmers have access to the source code can change any program by adding, changing, or fixing it. Closed source protects the source code and doesn't let anyone share it. The price for a closed source is high and you must have a license to use it. They also restrict users usability and modification of the software.

Advantages of Open Source

- Community
- Better Security
- Reliability

Disadvantages of Open Source

- Support
- Importing Data
- Hidden Costs

Advantages of Closed Source

- Receive full access
- No compliance issues
- Built with the end-user in mind

Disadvantages of CLosed Source

- Cost is much higher
- Inability to modify
- Might have salespeople calling you

The Free software movement

Free software means software that respects users freedom and community. This movement shows users that they have the freedom to do as they please within their program. Just because they say it is a "free" software, does not mean that it's actually free. You may pay, you may not; but the point is to use the software however you'd like. When users don't control their program, it's called "nonfree" or "proprietary".

The 4 Freedoms:

- **Freedom 0:** to run the program as you wish
- **Freedom 1:** to study how the program works and change it so it does your computing
- **Freedom 2:** to redistribute copies to help others
- **Freedom 3:** to distribute copies of your modidied version to others

Sources

- https://opensource.com/article/17/8/enterprise-open-source-advantages
- https://www.nibusinessinfo.co.uk/content/disadvantages-open-source-software
- https://brandongaille.com/19-pros-and-cons-of-closed-source-software/
- https://en.wikipedia.org/wiki/Red_Hat_Enterprise_Linux
- https://en.wikipedia.org/wiki/Ubuntu
- https://en.wikipedia.org/wiki/Fedora_Linux
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- https://en.wikipedia.org/wiki/Kali_Linux
- https://www.synopsys.com/glossary/what-is-open-source-software.html
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- https://en.wikipedia.org/wiki/History_of_Linux