INTRODUCTION
Chosen Distro's: Fedora Linux and Manjaro Linux

The goal of this presentation is to compare and contrast these different distributions of Linux to see:

- Each's strengths and weaknesses
- For what purpose each was built
- How each visually and technically differ through demonstrations

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- Community-driven Linux distribution
- Red hat based version
- Committed to being at the forefront of technology, with regular releases that include the newest features and improvements
- Developed for professionals and enthusiasts who work with the latest tools and technology, such as developers and system administrators

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- The first version of the community-driven Linux distribution Fedora appeared in 2003.
- When Red Hat Enterprise Linux first came out, it was intended to be a community-driven replacement for the commercial Red Hat Linux distribution (RHEL).
- Red Hat sponsored Fedora and offered the project resources and support.
- Fedora Core 1 was the name of the initial version of Fedora, which was built using the Red Hat Linux codebase.
- The Fedora Project's own codebase, which was based on the Linux Standard Base, was adopted with the release of Fedora Core 2 in 2004. (LSB).
- The Fedora Unity project, which offered several versions of Fedora with multiple desktop settings and software packages, was presented by Fedora in 2007.
- The Fedora Electronic Lab variant was first presented in Fedora 7, which was published in 2007. It offered a selection of open-source software tools for computer-aided design (CAD) and electronic design automation (EDA) (CAD).
- For graphic designers and artists, Fedora's Fedora Design Suite spin, which debuted in 2011, offered a selection of open-source design applications.
- With assistance from Red Hat and other organizations, the Fedora Project community still develops and maintains Fedora. It is known for being a cutting-edge distribution that programmers, system administrators, and fans frequently utilize.

- For a variety of use cases, including development tools, web servers, desktop apps, and more, Fedora offers access to a huge selection of software packages.
- It is dedicated to free software and open-source ideas, and it frequently serves as a testing ground for novel features and technological advancements that could later be incorporated in other distributions.
- With frequent updates and releases that include the newest bug fixes and security patches, Fedora is renowned for its stability and security.
- It is compatible with other RPM-based distributions like Red Hat Enterprise Linux (RHEL), CentOS, and OpenSUSE because it makes use of the RPM package management system.
- The Fedora community is open to contributions from users, developers, and enthusiasts everywhere.

- The setup for Fedora Linux was direct, but assumed more prior knowledge of how the system worked in order to complete the setup.
- The applications were easy to use at first, but the more you delved into the functionality of the applications they became more complicated and intuitive. This is reflected of the system administration functionality that Fedora is designed for.
- Compared to Manjaro, Fedora Linux prompted greater issues even after installation and required a whole reset of the virtual machine to continue the demo.

- The tools available to the operating system carried great power to the user at hand and could easily break aspects of the machine without prior training or knowledge.

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1. Installation to Disk
2. DNF Package Installer
    a. DNF stands for "Dandified Yum," indicating that it is an improvement on the more established yum package management. Often used in Linux versions of Fedora, RHEL, and CentOS.
    b. The software and all of its dependencies DNF utilizes are contained in binary RPM (Red Hat Package Manager) packages.
3. Nautilus File Explorer
    a. The default file explorer in Fedora Linux is the Nautilus file manager, generally known as Files. A GNOME-based file manager, Nautilus offers a graphical user interface for controlling files, directories, and other file-related tasks.
4. Firefox Web Browser
    a. Open-source web browser Firefox is well-known and widely used. It is accessible on many other systems, including Linux. Due to its reputation for security, privacy, customization options, and adherence to open standards, it is frequently the default browser on many Linux variants.
5. LiveUSB Fedora Media Writer
    a. A graphical utility called Fedora Media Writer is used to make bootable USB devices that contain Fedora Linux. It is based on the open-source program LiveUSB Creator, which Red Hat first created.

- The value of community participation: Fedora is a community-driven project that strongly depends on user contributions. This is seen by the regular release of new versions and upgrades, many of which are motivated by community input and suggestions. This highlights the importance of open source software and the advantages of a friendly community.
- The advantages of a rolling release strategy: Fedora is well known for its rolling release approach, which entails the ongoing distribution of new versions and updates as opposed to major, occasional changes. Without having to wait for a significant release, this model gives users access to the most recent features and advancements, but it can also make it more challenging to maintain stability and compatibility with other software.
- The significance of security and privacy: With features like SELinux (Security-Enhanced Linux) and the use of the Wayland display server, Fedora lays a significant focus on security and privacy. This demonstrates the growing significance of security and privacy in contemporary computing and the requirement for software that gives these issues top priority.
- The advantages of a modular strategy: Fedora employs a modular strategy for software packaging, allowing users to install only the components they require and avoiding irrational dependencies. This can make it simpler to adapt the system to suit different demands, decrease system bloat, and increase speed.
- The importance of experimentation and innovation: Fedora is renowned for its innovation and experimentation, with a focus on examining new technologies and expanding the realms of possibility. This may result in intriguing new enhancements and features, but it may also make the system more complicated and challenging for some customers to utilize. In the end, the takeaways from Fedora emphasize the value of collaboration, security, modularity, experimentation, and creativity in the creation of contemporary software
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- A distribution based on Arch Linux
- It is an open-source distribution, meaning that users and developers are free to use and alter all of its source code.
- Because it uses a rolling release distribution, changes are regularly sent to users rather than being released in major version updates.
- It is a user-friendly distribution that has an emphasis on offering a clear and understandable user interface.

- A group of programmers that wanted to make an Arch Linux-based distribution that was easier for people to use originally published Manjaro Linux in 2011.
- Roland Singer initiated the project because he wanted to develop a Linux distribution that was simple to set up and use but still had the strength and adaptability of Arch Linux.
- Version 0.8.0 of Manjaro, the initial release, used the Xfce desktop environment and was based on Arch Linux.
- For use on ARM-based devices like the Raspberry Pi, the Manjaro team published a new version of the distribution in 2019 called Manjaro ARM.
- Manjaro ran under the version name “Ascella” from 2012 to 2014 on version 0.8 until yearly released changed the naming system.
- Over the years, Manjaro Linux has produced a number of significant releases, the most recent stable version being Manjaro 21.0 "Ornara," which was made available in May 2021.
- Manjaro Linux is offered in a number of official editions, including Architect (a basic edition), Xfce, KDE Plasma, and GNOME.
- Additionally, a broad variety of hardware architectures, such as x86_64, ARMv7, ARMv8, and aarch64, are supported by Manjaro Linux.
- One of the most well-known Arch Linux-based variants today, Manjaro has a solid reputation for being user-friendly, quick, and dependable.

- The distribution of Manjaro is developed and maintained by a vibrant community of users and developers.
- It is made to be usable by anyone with all levels of expertise, from novices to experts.
- The extensive customization options offered by Manjaro enable users to adapt the distribution to their unique requirements and preferences.
- Its speed and modest weight make it perfect for usage on outdated or low-end systems.
- Architectures supported by Manjaro include x86-64, ARM, and Raspberry Pi.
- The distribution gives users access to the Arch User Repository (AUR), which has a large collection of software packages that users have contributed.
    - Users can easily install, update, and uninstall software packages using the distribution's user-friendly package manager, "Pacman."
- Manjaro comes with a variety of tools for maintaining and administering systems, including tools for backup and restore, disk management, and system monitoring.

- The setup for Manjaro was simple and to the point, even being completed faster compared to the Fedora installation.
- The desktop environment and applications are based entirely for ease of use. Most applications were straight to the point and cleanly graphically designed.
- The availability of software and package selection was evident through systems like Arch User Repository (AUR), including ease of installation.
- Less knowledgeable users are able to catch on much faster, a clear reflection of the design based around accessibility.

- Installation to Disk
- KDE Plasma Desktop Widgets and Customization
    - One of Manjaro Linux's official desktop environments is the KDE Plasma environment. There are several customization options available in KDE Plasma, including the capability to add and delete widgets.
- Firefox Web browser
    - Open-source web browser Firefox is well-known and widely used. It is accessible on many other systems, including Linux. Due to its reputation for security, privacy, customization options, and adherence to open standards, it is frequently the default browser on many Linux variants.
- Dolphin File Explorer
    - Dolphin is the default file manager (explorer) for the KDE Plasma desktop environment, one of Manjaro Linux's official desktop environments. For handling files, directories, and other file-related tasks, Dolphin offers a user-friendly interface.
- Arch User Repository (AUR)
    - The term "Arch User Repository" (AUR) refers to a community-run repository of packages for Arch Linux and distributions based on Arch, such as Manjaro Linux. Packages not included in the official Manjaro or Arch repositories, as well as packages that are not completely supported by the Arch or Manjaro projects, are all found in the AUR.
- Pacman
    - The package manager employed by Arch Linux and other Arch-based distributions, such as Manjaro Linux, is called Pacman. It is a command-line utility used to manage software packages on the system and perform upgrades and installations.

- Rolling release model: Manjaro has a rolling release model, which entails that updates are continuously made accessible and implemented. This guarantees that customers always have access to the most recent software releases, but it also implies that upgrades occasionally cause the system to malfunction. One thing to take away from Manjaro is the value of keeping the system updated, along with the caution that should be used while doing so and the recommendation to test updates on non-production systems before deploying them to a production environment.
- Easy-to-use installer: Manjaro comes with a user-friendly installer that walks users through the installation process and supports a number of desktop environments and configurable partitions. This can be helpful for new Linux users who might not feel at ease using the command-line interface. Manjaro has taught us how crucial it is to have an easy-to-use installation process so that new users can quickly get up and running with the operating system.
- Access to Arch Linux packages: One of Manjaro's distinguishing characteristics is its availability of Arch Linux packages. Users can now access a sizable collection of software packages that the Arch Linux community regularly updates and maintains. The significance of developing on top of current open-source projects and utilizing the efforts

of others in order to produce a more reliable and comprehensive solution is something that can be learned from Manjaro.
- Community-driven development: A group of volunteers who are enthusiastic about open-source software and Linux create and maintain Manjaro. It is possible to respond to user requests and shifting market trends with greater flexibility and agility thanks to this community-driven development strategy. The value of building a strong community around an open-source project and integrating users in the development process may be learned from Manjaro.
- Customizability: Manjaro has a high degree of customizability, allowing users to change a number of system components, including the desktop environment, themes, and software packages. This can be helpful for power users who want to modify the system to suit their unique requirements and tastes. Manjaro teaches us how crucial it is to provide users the freedom and flexibility to alter the operating system to suit their own needs.

Similarities
- Both are based on the Linux operating system.
- Both initiatives are strongly supported by their respective communities and are community-driven.
- Both are built using a rolling-release update approach, which means they receive upgrades continuously as opposed to infrequently.
- For software packages, both make use of the RPM package format.
- Both support a variety of window managers and desktop environments.

Differences
- Fedora is an independent community-driven project sponsored by Red Hat, whereas Manjaro is a community-driven project supported by the Manjaro Team.
- In contrast to Fedora, which seeks to be a bleeding-edge distribution, Manjaro is renowned for offering a mix between stability and cutting-edge software.
- Fedora uses DNF as its package management, while Manjaro uses Pacman.
- Fedora publishes major versions every six months, whereas Manjaro offers ongoing updates as part of its rolling-release distribution.
- While Fedora concentrates on offering a purely open-source experience, Manjaro offers access to proprietary applications and drivers right out of the box.
- Fedora is generally intended for developers and system administrators, whereas Manjaro is made for both inexperienced and seasoned users.
- Fedora is renowned for its strong devotion to open-source ideas, while Manjaro strives to be user-friendly and accessible to a larger range of users.

- “By wisdom a house is built, and by understanding it is established; by knowledge the rooms are filled with all precious and pleasant riches." (Proverbs 24:3-4, ESV)
    - This passage focuses on the significance of laying a solid foundation of wisdom and insight in order to have a secure and stable life. This emphasizes that in order to develop a secure and stable life, it is crucial to lay a solid foundation of knowledge, wisdom, and faith. These passages may not directly relate to technology, but they can be used to discuss the creation and maintenance of safe, dependable, and stable systems that we use every day and base our working lives around.
- "As each has received a gift, use it to serve one another, as good stewards of God's varied grace: whoever speaks, as one who speaks oracles of God; whoever serves, as one who serves by the strength that God supplies—in order that in everything God may

be glorified through Jesus Christ. To him belong glory and dominion forever and ever. Amen." (1 Peter 4:10-11, ESV)
    - This text implores Christians to use their talents and skills for the benefit of others and implies that doing so can glorify God. Although this passage may not specifically refer to open-source software, it can be used to support the notion of working together to develop and advance technology for the good of all. One can help the user and developer communities and possibly have a beneficial social impact by using their knowledge and talents to contribute to open-source projects.
- "Do you see a man skillful in his work? He will stand before kings; he will not stand before obscure men." (Proverbs 22:29, ESV)
    - This verse highlights the importance of talent and expertise in one's work and implies that people who possess these qualities will succeed and be well-liked in their area. Using the proper equipment for the job can be considered part of being well-equipped, as having the right gear can make a skilled worker even more productive and efficient.