# Ubuntu

For Ubuntu, the target audience was for beginners, focusing on a more easy-to-use form of Linux. It’s first mission was to provide free software globally, so that everyone can download it on the same terms. They also wanted to cut the cost of professional services for people who use Ubuntu at scale, by using services provided by Canonical. For new users coming into Ubuntu, they face a learning curve as, compared to windows, ubuntu has a different interface and command structure, and could face compatibility issues such as Fortnite, and any other Windows applications. Ubuntu features its own community support page you can go to, to ask questions and answer and questions you feel you can.

# Arch Linux

For Arch Linux, the target audience is more for developers, as it was designed as a minimal base system, where everything can be configured by the user, and assemble the environment by installing only what is required or desired for their purposes. GUI configuration utilities were not provided, at least officially, and the user would have to configure most of their system through the shell by editing text files. Arch Linux strives to allow users to easily manage their system and packages by using what they call their Pacman package manager. Arch Linux is a very demanding installation process, being entirely text-based and would require quite a bit of technical knowledge, which could make it difficult for new Linux users to adopt. However, Arch Linux also provides a wide array of repositories for its users to download from to suit their needs.

# NixOS

For NixOS, the target audience is for the general public. It is configured using composable modules, which allow it’s users to build the OS to their own needs. NixOS was designed for reliable software deployment, which led to the creation of Nix, and eventually NixOS. It features a declarative configuration model, which allows users to build entire new versions of NixOs, without overwriting previous versions. It also features reliable and atomic upgrades, which will allow for their upgrades to always produce the same result, regardless of any packages in the system. NixOs also features a rollback system, where if the user wishes to use the previous system, they can do so by using a special command. Some challenges is that since NixOs uses a declarative abstraction, it can make the underlying code more complex, and make it harder to implement and customize code. Since Nix also uses heavy recursion it could lead to difficulties debugging code. The documentation for Nix is considered to be poor, and this is well-known by the community.

# Fedora Linux

For Fedora Linux, it was designed to be used by developers and features many different specific distros for each need, such as the normal workstation, the server, the IoT, and the Cloud distro. It was designed to have reliable updates, updating every 13 months, to be free, and to have a collection of apps for any developer need. Fedora Linux was designed to make virtualization easier, with their own app named “Boxes” which allows users to install whatever OS they want to virtualize and it will work. It also features ready to go Containers, which allow for ease of use to get specific code and frameworks, such as nodejs. Due to it’s rapid update cycle, new Fedora updates are released frequently, which can lead to potential instability, and can lead to compatibility issues with previously working code. Fedora has their own discussion page, that allows it’s users and developers to communicate, and ask any questions if need be.

# Kubuntu

For Kubuntu, it was designed to be used by the general public. Some of it’s features are it’s ease in finding whatever files a user needs as well as browsing images, being able to open and read whatever documents they need with ease, being built-in with multimedia and music, and a complete and professional office suite. Some issues that a user of Kubuntu could face are program errors, hardware issues, and driver incompatabilities, such as it’s graphics drivers, due to KDE’s reliance on specific graphical features. It has a smaller community that other distros and as such it will take longer to fix any issues/bugs.