A Review of Energetic and Sluggish Linux Distribution

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Abstract

Linux is a popular open-source and successfully running operating system. Their users are increased day by day. There is hundreds of Linux operating system available in the world. Each version of Linux is known as Linux distribution. For a user, it is very confusing to choose the perfect Linux operating system. So, questions arise, what are Linux distributions? How one should chose Linux distributions? In this article, I will try to answer these questions and present the way to choose the Linux distro. The basis points that one should keep in mind to select Linux distro as per their requirements. Because each Linux distro is not able to fulfill each and everyone's need. Finally, present the top available Linux distro.

Introduction

Linux is an open-source operating system. It is best used and well known operating system in the current world. It is as much as popular as Microsoft Windows, Apple IOS, or macOS. Like other OS Linux have a graphical interface, and the same types of software you are accustomed to, such as word processors, photo editors, video editors, and so on.[2] Many software companies made the same product with different versions that work with Linux, Windows and IOS, and other operating systems.

But Linux is different from other operating systems in a significant way. Linux is an open-source software means code used to create Linux is free and available for the public. Anyone can download Linux to view and to edit or modify it in the way they require it. So, Linux is open for users who have the appropriate skills and curiosity to contribute to the enhancement of Linux. This feature of Linux gives birth to Linux distributions or Linux distro.

Linux Distributions

Linux is only a kernel but the people use Linux as Linux distribution. A Linux distro is the set of components that are required to achieve a working operating system and the processes needed to install these components to achieve a running system. Linux distro is a version of the Linux operating system and related components. A Linux distribution includes the Linux kernel, software modules from the GNU Project, an installation program, window manager (user interface), utilities,

applications, and documentation. Some distributions contain a thousand or more files. [1]

Linux distro comes one after the other, a group of Linux distro use the same copy of kernel with a different set of utilities. In this way, they have derived relationships in many Linux versions. But all Linux distro are not same, they are different in the way

Based on Cost, We Need To Pay

Commercial vs. Community Commercial versions of the Linux are the paid and community versions are free.

Free version Linux distro provides a copy of the operating system, some utilities, and fewer or no technical support. Basically community versions focus on the common requirements of many end-users.

On the other hand, paid version Linux distro provides a copy of the operating system, utilities, added features, and all latest updates with full tech support programs. Commercial versions provide mission-critical applications and they are specially designed versions of the operating system.

Red hat Linux is a Commercial version and Fedora is a community version of Linux provide by the same vendor. Novell's SUSE Linux and open SUSE paid and free version

respectively provided by another vendor.

Based on Packaging Formats

RPM Based Distributions vs. Deb Based Distributions (Debian) Rpm and deb distro are different from each other based on text commands that we used to install the Linux and different software/packages on that version of Linux. Rpm based distro generally use yum and deb use apt-get command.

Red hat Linux, Fedora, Mandriva, CentOS, SUSE distro are rpm-based and Ubuntu, Knoppix, Damn Small Linux, Linux Mint are Debian based distributions.

And there are many more ways in which Linux distro is different from each other. But the main thing is, what we shall consider when we select a particular distro or if there are many distros then what should we check to pick distro.

To select a distro

There are hundreds of Linux distro present in this era of the computer world. The selection of a perfect Linux Distribution is very important. Because if one uses a wrong Linux distro which is not developed for their needs in that case user can feel Linux is a bad system and they may not get agree to try it again? Each Linux distributes have their design and working environment, moreover, each Linux distro fulfill some set of user need. It is very important to select a

Linux distro that perfectly matches with demands. Let

discuss the basic select points that help

Purpose

For what purpose one use Linux? Users who have a general need like they need it for word processing, internet surfing, viewing, or editing pictures or use some common light weighted software have different Linux distro. Or users need Linux for special purposes like scientific activities, gaming OS, etc. have different versions of Linux distro. Here I present the list of different Linux distro differentiated on the bases of purpose.

1. General

Linux Mint, Ubuntu, Debian, Mageia, Fedora, OpenSUSE, Arch Linux, CentOS, PCLinuxOS, Slackware

2. Special

Linux Distros for Scientific, BioLinux, CAELinux, Lin4Neuro, Fedora Scientific

Poseidon Linux, Fedora Astronomy Suite, Fedora Robotics Suite.

3. Linux distro for gaming

SteamOS, Play on Linux, Lakka, SparkyLinux, GameOS, Ubuntu GamePack

4. Linux distro for small businesses

Ubuntu, CentOS, ClearOS, OpenSUSE, Manjaro

User Friendly

Users who have new in the field had different expectation than who have already use the computer with Linux OS. New users need a graphics-based user-friendly look and simplicity to perform the there desired task. On the other side, the expert may demand high performance with more and more features and tools support. Here I present a list of some available options

1. Beginners

Ubuntu, Linux Mint Cinnamon, Zorin OS, Elementary OS, MX Linux, Linux Mint Mate, Manjaro Linux

2. Advanced users Red Hat Enterprise Linux, Arch Linux, CentOS, Gentoo, Debian, Fedora, Ubuntu Damn Vulnerable Linux, Kali Linux, Opens use.

User's Familiarity with Other OS

This is another point for the select user who has already work on a different operating system like windows or mac may want to shift from there OS to Linux. So to get the same feel as their previous OS they must choose Linux distro which is specially designed for this

purpose. Here is the list of some available options

1. Window Users

    Linux Lite, Zorin OS, Kubuntu, Linux Mint, Ubuntu MATE

2. macOS Users

    Elementary OS, Deepin Linux, BackSlash Linux, Gmac Linux

Environment

What type of environment is required? Like desktop, server, mobile or cloud computing, etc. for the desktop user are the regular users their need is simple and some of the work is performed on application software's so they need a simple operating system that supports their software. On the other hand, server users need many features and support from the operating system. Mobile users have different needs and cloud computing users have their own set of demands from the operating system.

Here is the list of supporting Linux distro for a different environment.

1. Desktop
    Ubuntu desktop, Fedora desktop, Arch Linux desktop, Deepin, Kubuntu, Budgie
    Bodhi Linux, Peppermint OS, Mandriva Linux

2. Server

    Ubuntu Server, CentOS, Fedora, OpenSUSE, Leap, Debian Stable, Slackware, Arch Linux server, Mageia, Oracle Linux, Red Hat Enterprise Linux

3. Embedded Mobile Ubuntu Touch, Plasma mobile,
    Helium, PureOS, Sailfish OS, PostmarketOS, Ubuntu Phone, GNOME, or Phish, LuneOS.

4. Cloud Computing
    Cloud Linux OS, Amazon Linux, Red Hat Enterprise Linux Desktop, CentOS
    SUSE Linux Enterprise Desktop, Oracle Linux – CentOS-based, Linux Mint
    Ubuntu for Enterprise, Peppermint OS, Cub Linux, Apricity OS

Desktop Environment

The desktop environment is the implementation of an interface for graphical users. In Linux, there are many desktop environments available as an option. The desktop environment is the look and feels with shell functionality. Some popular desktop environments and there supporting Linux Distributions.

i. Gnome

    Debian, OpenSuse, Fedora, CentOS, Ubuntu, Red Hat

Enterprise Linux, Pop! OS
Oracle Linux, SteamOS, Tails,
Endless OS ii.

KDE

Debian, Fedora KDE, Feren OS,
KDE Neon, Kubuntu, Mageia,
Manjaro KDE, Netrunner, NixOS,
OpenMandriva, openSUSE,
PCLinuxOS, Parrot Security OS

iii. Mate

Alpine Linux, Arch Linux, Debian,
Fedora, Gentoo, GNU Guix and
GNU GuixSD

Linux Mint, Mageia, Manjaro,
OpenSUSE, Parrot Security OS,
PCLinuxOS, Ubuntu MATE,
Uruk GNU/Linux iv.

Unity

Arch Linux, Fedora, Frugalware,
OpenSUSE, Manjaro, Ubuntu
Unity

v.   Cinnamon

Linux Mint vi.

Xfce

Debian, Xubuntu, Fedora,
OpenSuse vii.

LXDE

Lubuntu, Debian, OpenSuse,
Linux Mint

Package Management System

There are two popular options for package management system: Debian and RPM

Debian is an organization of de developers' interest which builds precompiled binary packages of free software. They consistently develop and distribute them from their archive.

RPM is a powerful package management system. RPM is capable of building computer software from source and make distributable packages installing, updating and uninstalling packaged software querying detailed information about the packaged software, whether installed or not verifying the integrity of packaged software and resulting software installation.

There are also some other Linux distros available that nether use neither Debian nor RPM.

List of Linux distro that supports Debian, RPM and other respectively

1. **Debian Based** i.

Debian,

   ii.   Ubuntu

   iii.   Linux   Mint   iv.
   SteamOS

2. **RPM Based**

i.   RedHat Enterprise Linux (RHEL)

ii.   CentOS

iii.   Fedora iv. OpenSuse v. Mageia

3. Other

i. Arch Linux

ii. Slackware Linux

iii. Gentoo Linux

Snap Support

Snaps are cross-distribution, dependency-free, and easy to install applications packaged with all their dependencies to run on all major Linux distributions. [3] As with emerging trends with cloud and IoT snap provide single platform support for developers. A snap package for the Ubuntu Core system contains all its dependencies. This has a couple of advantages over traditional deb or rpm based dependency handling, the most important being that a developer can always be assured that there are no regressions triggered by changes to the system underneath their app[4]

Snaps are secure and have automatically update capability. Snaps are used almost all major Linux distributions like Ubuntu, Linux Mint, Debian and Fedora, etc.

Snap pre-installed

i. Ubuntu 16.04.4 LTS (Xenial Xerus) or later, ii. Ubuntu 18.04 LTS (Bionic Beaver),

iii. Ubuntu 18.10 (Cosmic Cuttlefish),

iv. Ubuntu 19.04 (Disco Dingo) and v. Ubuntu 19.10 (Loan Ermine)

vi. Solus 3

vii. Zorin OS

Without snap pre-installed

i. Arch Linux

ii. CentOS

iii. Debian iv. elementary OS v. Fedora

vi. GalliumOS

vii. Kali Linux

viii. KDE Neon ix. Kubuntu

x. Linux Mint

xi. Lubuntu

xii. Manjaro Linux

xiii. openSUSE xiv. Parrot Security OS

xv. Pop!_OS

xvi. Raspbian

xvii. Red Hat Enterprise Linux (RHEL)

xviii. Solus

xix. Ubuntu

xx. Xubuntu [5]

Professional Certification

Red Hat Enterprise Linux distro is the option for them who want to build a professional carrier with Linux. Red Hat Enterprise Linux provides many professional certifications all over the world from basic to advance levels. Their certification has a remarkable place in the IT industry. So the users who

need certification go with Red Hat Enterprise Linux.

One another option for them is Oracle Linux which uses Linux as a platform with oracle. Their certifications have their market place. **Support**

There are two types of support provided by the different Linux distro one is full support and another is partial support. Full support is kind of commercial or paid, so the provider troubleshoots all problems. Community or free support just gives online documents and forms to discuss your problem with others who use the same Linux distro and have the same problems and may give a solution.

Release type

Linux distros have two types of release: stable and rolling. The stable release is very well tested and successfully running in the market. Rolling release is under real market testing and may have some issues that need improvement. **Current Status**

perfectly matched Linux distro that wonderfully satisfies the user's demands. Before starting with many Linux distro you must consider the desired points carefully. So, you can go with the best, not with the worst. <u>References</u>

Finally with all other points check the current states of the Linux distro from distrowatch.com. This is the website that keeps up to date information about all open source OSs. This provides searching and filtering options for Linux distro and their active or nonactive states.

Here is the list of top 10 Linux distributions from past 6 months

1. MX Linux
2. Manjaro
3. Mint
4. Ubuntu
5. Debian
6. Elementary
7. Solus
8. Fedora
9. Zorin
10. Pop!_OS[6]

Conclusion

Lastly, it is very good to use and work with an open-source operating system like Linux. But to get a good experience it's also very important to choose the

[1] https://encyclopedia2.thefreedictionary.com/Linux+distribution

[2] https://opensource.com/resources/linux

[3] https://www.tecmint.com/install-snap-inlinux/

[4] https://itsfoss.com/use-snap-packagesubuntu-16-04/

[5] https://snapcraft.io/

[6] https://distrowatch.com/