

LiveCD distributions (also having a generic name LiveDistro) are examples of open source operating systems which are executed upon boot, without manual installation. They are typically stored on bootable media such as a CD-ROM (LiveCD), DVD (Live DVD), USB flash drive (LIVE USB), among others. Among different liveCDs, Linux based ones are very popular. The Linux based liveCDs fall mainly under the following categories:

- Debian-based, e.g. Ubuntu, Kanotix, Gnoppix, Knoppix, Damn Small Linux(DSL) etc.
- Gentoo-based, e.g. Flash Linux, Jollix, Kororaa, VidaLinux, Gentoo LiveCD etc
- RPM-based, e.g. PCLinuxOS, SuSE, etc.
- Slackware-based, e.g. SLAX, SLAMPP, STUX, etc.

Since the list of liveCDs is endless, it often becomes hard to choose which one to use. Functionality and context become the deciding factors. We can find liveCDs with a wide range of functions. Some of them are listed below:

- **Desktops:** provides a working GUI desktop environment with a collection of desktop programs, such as browsers and text editors. Many also include utilities for other purposes, such as home entertainment, but are only listed here because the additional functions are not their primary focus.
- **OS Replacement:** provides an option to transfer the cd to the hard drive, or to install an OS in a different form
- **Education:** provides a collection of educational programs, or was created to be used in the educational field
- **Rescue:** provides tools needed for data recovery
- **Clustering:** provides tools for making clusters
- **Security:** contains network security tools
- **Home Entertainment:** geared towards playing video and audio
- **Gaming:** video games!
- **Medical:** contains medical programs
- **Diagnostics:** contains utilities for testing hardware
- **Firewalls:** distributions created to be used as firewalls
- **Forensics:** distributions containing forensic tools
- **Servers:** distributions used for various server functions

DistroWatch.com and frozentechn.com do a good job of listing the most popular liveCDs. For the purpose of my survey, I have chosen to compare and contrast one liveCD each from the different Linux LiveCD categories which appear on the top lists of DistroWatch.com, e.g. Ubuntu,

Gentoo Linux, PCLinuxOS and SLAX.

Ubuntu: It is a widely used linux distribution predominantly targeted at personal computers. Based on Debian GNU/Linux, Ubuntu concentrates on usability, regular releases, ease of installation, and freedom from legal restrictions. Ubuntu has software management tools and an elegant interface that rivals Windows (and perhaps even Mac OS X). It is so easy to use it almost takes the thrill and intellectual challenge out of using Linux. Ubuntu 6.10 comes with the latest versions of the most popular software: **OpenOffice** 2.0.4 (the highly robust office suite), **Firefox** 2.0 and Gimp 2.2.13 (the Open Source equivalent of Photoshop). Ubuntu 6.10 uses the **Gnome** 2.16 desktop, which looks very appealing and actually runs very snappily (and seemingly faster than KDE desktop). If you have a slightly older machine that you'd like to put Linux on, Ubuntu 6.10 makes a great choice. It is secure, well-supported and very easy to use. For general web browsing, email, and everyday office and graphical programs, Ubuntu functions quite well.

Gentoo Linux: Gentoo's been around since 2002 (if not, earlier). Gentoo's been known affectionately as one of the most time consuming distros to install. Gentoo Linux is a unique GNU/Linux distribution that compiles all of its software from source code rather than using precompiled binary packages. Gentoo is arranged much like FreeBSD, except it has command line tools that automate all of the special functions that must be done by hand in FreeBSD. Where FreeBSD has the Ports system, Gentoo has the automated Portage system; where FreeBSD has /etc/rc.conf to regulate boot processes, Gentoo has the rc-update tool to add or remove scripts from the startup process. Gentoo project provides in-depth and generally up-to-date documentation that will get your server up and running securely and efficiently in short order.

PCLinuxOS: PCLinuxOS, often abbreviated as **pclos**, is a GNU/Linux distribution. As such, it constitutes a complete operating system for personal computers, bundled together with a variety of software titles. Once locally installed on a PC's hard drive, the user of PCLinuxOS can add, remove or update all desired software titles (packages) by utilising the Advanced Packaging Tool (APT), a package management system (originally from the Debian distribution), together with Synaptic, a GUI frontend to APT. It also includes the famous applications such as OpenOffice and Mozilla Firefox. In general PCLinuxOS is suitable for brand new Linux users who want to test Live CD and Linux.

SLAX: It is a Linux LiveCd based on the Slackware distro. Despite it being open source, was made by one man: Tomas Matejcek, using the Linux Live Scripts and Slackware as a base. With other Live Linux systems, one is stuck with the type and amount of applications the creator decided to include. With SLAX, we can customize the system to fit one's needs, by adding additional software in the form of compressed modules. SLAX itself is very useful without any modules, but we can add a lot of own programs to make it even more suitable for our needs.

A Comparison:

LiveCD	Focus/Primary Functions	S/W Utilities and Tools	Update Frequency	Last Update	Available Support
Ubuntu	Desktop, OS Replacement, easy to use OS for beginners	OpenOffice 2.0.4, Firefox 2.0, Gimp 2.2.13 and other OS tools	Frequent	October 26, 2006	www.ubuntu.com
Gentoo Linux	OS Replacement, Rescue, not suitable for Novice	KOffice, OpenOffice	Frequent	August 31, 2006	www.gentoo.org
PCLinuxOS	Desktop, OS Replacement, suitable for beginners	Open Office, Mizilla Firefox	Frequent	August 21, 2006	www.pclinuxos.com
SLAX	Desktop, OS	KDE, KOffice,	Frequent	November 24,	www.slax.org

	Replacement	Ethereal, Multimedia Tools,		2006	
--	-------------	-----------------------------------	--	------	--

References:

<http://www.performancepccanada.com/?defaultarticle=1070>
<http://www.frozentech.com/content/livecd.php>
http://en.wikipedia.org/wiki/Ubuntu_%28Linux_distribution%29
<http://distrowatch.com/weekly.php?issue=20050509#1>
<http://www.manicgeeks.com/viewstory.php?id=4>
<http://www.softwareinreview.com/cms/content/view/31/1/>
<http://linuxgazette.net/106/orr.html>
<http://www.gentoo.org/>
<http://www.slax.org/>