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## Difference Between Linux and UNIX

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What is the difference between Linux and UNIX operating systems?

UNIX is copyrighted name only big companies are allowed to use the UNIX copyright and name, so IBM AIX and Sun Solaris and HP-UX all are UNIX operating systems. The [Open Group holds](#) <sup>[2]</sup> the UNIX trademark in trust for the industry, and manages the UNIX trademark licensing program.

Most UNIX systems are commercial in nature.

## Linux is a UNIX Clone

But if you consider Portable Operating System Interface (POSIX) standards then Linux can be considered as UNIX. To quote from Official Linux kernel README file:

Linux is a Unix clone written from scratch by Linus Torvalds with assistance from a loosely-knit team of hackers across the Net. It aims towards POSIX compliance.

However, "Open Group" do not approve of the construction "Unix-like", and consider it misuse of their UNIX trademark.

## Linux Is Just a Kernel

Linux is just a kernel. All Linux distributions includes GUI system + GNU utilities (such as cp, mv, ls, date, bash etc) + installation & management tools + GNU c/c++ Compilers + Editors (vi) + and various applications (such as OpenOffice, Firefox). However, most UNIX operating systems are considered as complete operating system as everything come from a single source or vendor.

As I said earlier Linux is just a kernel and Linux distribution makes it complete usable operating systems by adding various applications. Most UNIX oses comes with A-Z programs such as editor, compilers etc. For example FreeBSD comes with A-Z programs.

## License and cost

Linux is Free (as in beer [freedom]). You can download it from the Internet or redistribute it under GNU licenses. You will see the best community support for Linux. Most UNIX like oses are not free (but this is changing fast, for example OpenSolaris UNIX). However, some Linux distributions such as Redhat / Novell provides additional Linux support, consultancy, bug fixing, and training for additional fees.

## User-Friendly

Linux is considered as most user friendly UNIX like os. It makes it easy to install sound card, flash players, and other desktop goodies.

## Security Firewall Software

Linux comes with open source netfilter/iptables based firewall tool to protect your server and desktop from the crackers and hackers. UNIX operating systems comes with its own firewall product (for example Solaris UNIX comes with ipfilter based firewall) or you need to purchase a 3rd party software such as Checkpoint UNIX firewall.

## Backup and Recovery Software

UNIX and Linux comes with different set of tools for backing up data to tape and other backup media. However, both of them share some common tools such as tar, dump/restore, cpio etc.

## End User Perspective

UNIX

[1]



[3]

The differences are not that big for the average end user. They will use the same shell (e.g. bash or ksh) and other development tools such as Perl or Eclipse development tool.

## System Administrator Perspective

Again, the differences are not that big for the system administrator. However, you may notice difference while performing the following operations:

1. Installation procedure
2. Hardware device names
3. Various admin commands or utilities
4. Software RAID device and mirroring
5. Logical volume management
6. Package management
7. Patch management

## UNIX Operating System Names

A few popular names:

1. HP-UX
2. IBM AIX
3. Sun Solairs
4. Mac OS X
5. IRIX

## Linux Distribution (Operating System) Names

A few popular names:

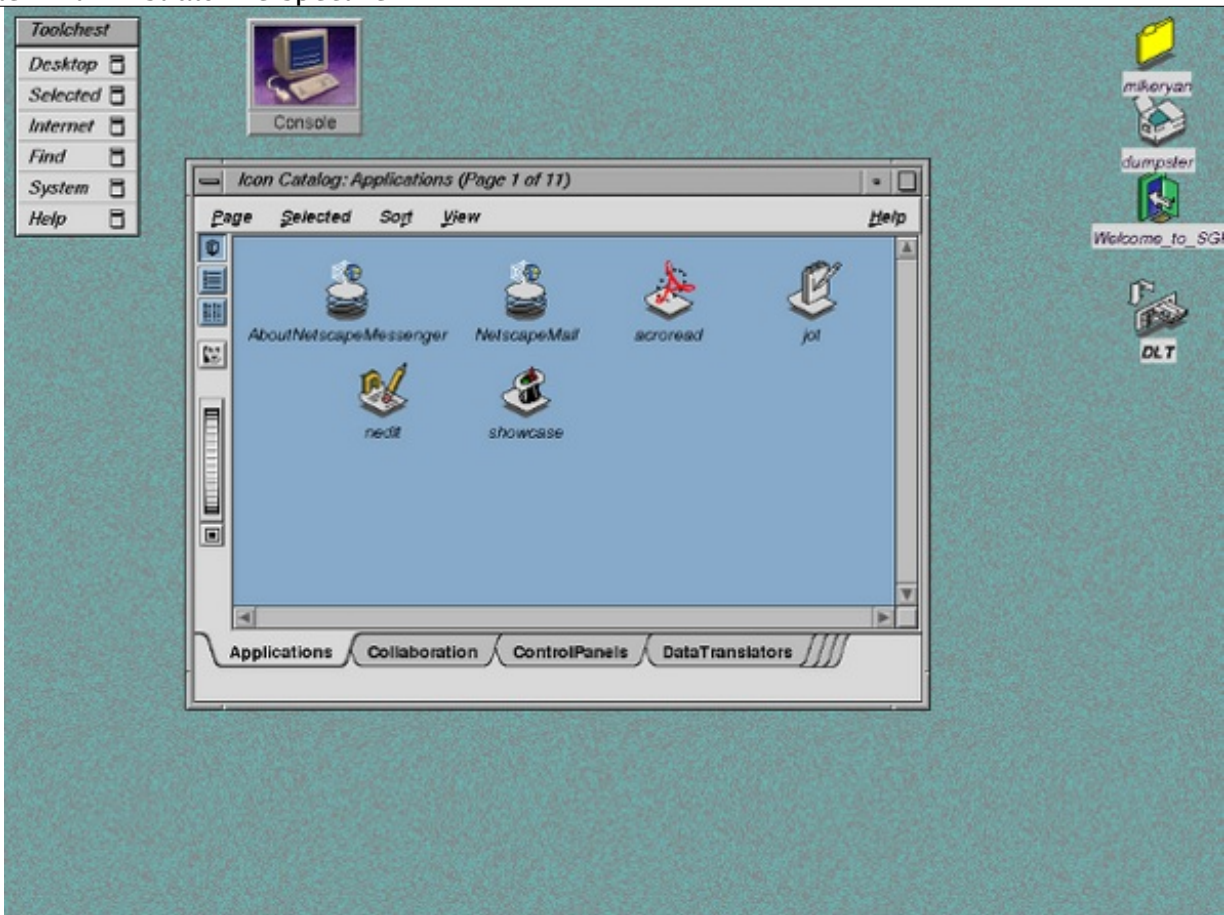
1. Redhat Enterprise Linux
2. Fedora Linux
3. Debian Linux
4. Suse Enterprise Linux
5. Ubuntu Linux

## Common Things Between Linux & UNIX

Both share many common applications such as:

1. GUI, file, and windows managers (KDE, Gnome)
2. Shells (ksh, csh, bash)
3. Various office applications
4. Development tools (perl, php, c, c++)
5. Posix interface

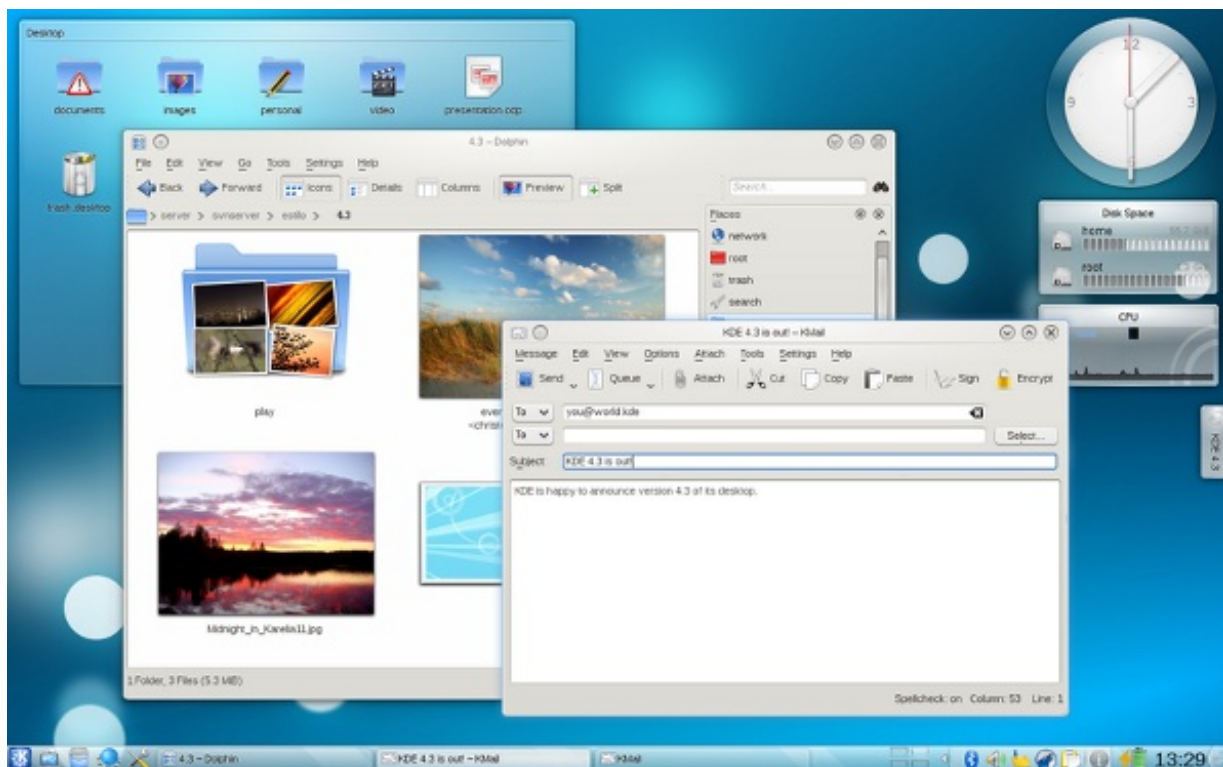
## A Sample UNIX Desktop Screenshot



[4]

Fig.01: UNIX Desktop - IRIX 6.5 Desktop

### A Sample Linux Desktop Screenshot



[5]

Fig.02: Linux KDE desktop environment

**Further readings:**

Following documents or URL should help anyone to get more idea:

- UNIX System Management and Security: [Differences between Linux, Solaris, AIX and HP-UX](#) <sup>[6]</sup>
- [40 years of Unix](#) <sup>[7]</sup>

(Image credit IRIX and KDE wikipedia articles)

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URLs in this post:

[1] Image: <http://www.cyberciti.biz/faq/category/unix/>

[2] Open Group holds: <http://www.unix.org/>

[3] Image: <http://www.cyberciti.biz/faq/category/linux/>

[4] Image: <http://files.cyberciti.biz/uploads/faq/2006/02/unix-desktop.png>

[5] Image: <http://www.cyberciti.biz/faq/what-is-the-difference-between-linux-and-unix/linux-kde-desktop/>

[6] Differences between Linux, Solaris, AIX and HP-UX: <http://www.sans.org/rr/whitepapers/unix/936.php>

[7] 40 years of Unix: <http://news.bbc.co.uk/2/hi/technology/8205976.stm>

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