



8 Things to Know When Switching from Windows to Linux

In this handbook:

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Changing from Windows to Linux requires a certain level of commitment, but it can open up a world of options and opportunities. Before making an OS change, consult documentation, make a detailed plan and be prepared to learn a variety of new skills.

Making the switch from Windows to Linux isn't difficult, but before changing, you should understand how Linux differs from Windows. Expect differences between the Windows and Linux communities and increased level of choice in Linux topics.

1. Linux isn't one thing

There isn't just one Linux OS. Microsoft Windows represents one OS controlled by one company. Because Linux code is open source, anyone can make their own Linux OS and customize it to suit their needs. Therefore, you can choose from thousands of Linux distributions.

Distributions are purpose-specific versions of Linux. For example, some distributions function as production servers in enterprise settings, and others are for creatives,

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developers or home users. Installed software oriented toward a particular use differentiates distributions from one another.

Another significant differentiator is the Linux community. Open source projects such as Linux rely on collaboration and building on the work of others. The Linux community spans organizations, languages and goals worldwide.

2. Why is Linux free?

Free and open source software can be difficult to understand for those used to restrictive licensing and proprietary software that you can't modify. Linux makes source code -- i.e., the programming behind applications -- freely available. Anyone can modify that code to create better software over time.

The result is that people can implement good ideas no matter where they come from and without any real regard for corporate agendas or financial bottom lines. Software evolves quickly and is subject to review only by the community, which often means increasing the application's security and stability.

Proprietary software -- i.e., closed source software -- comes pre-compiled for the consumer. You cannot modify it.

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3. You can change desktop environments

Microsoft provides an integrated GUI for Windows. It includes many settings, but a single desktop environment manages it all. With Linux, GUI desktop environments are optional, discrete software pieces that you can remove and replace like any other application.

You can choose the best desktop environment, rather than the one a given vendor provides. Users often install a GUI that consumes fewer resources on older systems or servers.

4. Linux is a mature OS

Linux is no longer just a server OS -- it can service home or office users as well. In the past, installing Linux was challenging, maintaining software was difficult and GUIs were relatively weaker. However, modern Linux desktops include a range of accessibility settings to make it easier for everyone to work with them.

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Seeing	
High Contrast	<input type="checkbox"/>
Large Text	<input type="checkbox"/>
Cursor Size	Default
Zoom	Off
Screen Reader	Off
Sound Keys	Off

5. Work at the command line

If you adopt Linux, expect to work at the Linux command line. GUIs are optional -- especially on servers -- and you might find many tasks quicker and simpler to execute in the terminal. There are two main syntax structures for Linux commands.

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Most commands use the `command -options argument` syntax, in which options modify the command. The command acts upon the argument.

For example, to display your home directory contents in long format, including hidden files, type:

```
$ ls -la /home/{username}
damon@Ubuntu20VirtualBox:~$ ls
2022      Documents  Music      projects  snap       Videos
Desktop  Downloads  Pictures   Public    Templates
```

Other commands use a `command subcommand argument` syntax.

For example, you can run the `systemctl` command with this syntax. To restart the `sshd` service by using `systemctl`, type:

```
# systemctl restart sshd
```

In this case, `restart` would be the subcommand.

To help users remember the variety of commands and related options, Linux offers a built-in manual to provide users with a quick reference, known as man-pages.

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For example, for the basic use and options for the `ls` command, type:

```
$ man ls
```

```
LS(1) User Commands
NAME
  ls - list directory contents
SYNOPSIS
  ls [OPTION]... [FILE]...
DESCRIPTION
  List information about the FILES (the current directory if none are
  specified).
  Sort entries alphabetically if none of -cftu is specified.
  Mandatory arguments to long options are preceded by a dash (-).
  -a, --all
    do not ignore entries starting with .
```

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6. Understand privilege escalation

For security reasons, you should avoid logging on with administrative privileges unless absolutely required. In Linux, the admin account is named `root` and has much more power than the Windows administrator account -- and, therefore, increased vulnerability.

Windows has the `Run As` feature to elevate privileges when running certain commands, and Linux uses `sudo` to exercise delegated tasks beyond those of the standard user. As a new Linux user, you might use `sudo` to manage services or software. Documentation often displays a command such as this one:

```
$ sudo systemctl restart rsyslog
```

The use of `sudo` varies by distribution. Some set a default configuration where standard users must use `sudo` to exercise root privileges, while other distributions encourage administrators to delegate privileges to meet their own requirements.

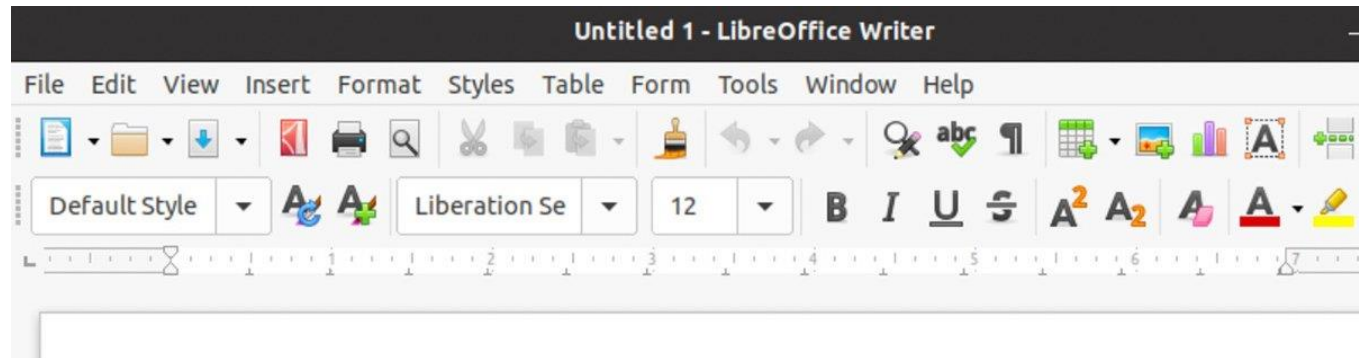
7. Find compatible open source software

OSes fundamentally enable productivity by running the applications users need. You likely require a productivity suite when you transition into Linux. The primary open

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source productivity suite is LibreOffice, which has cross-compatibility with Microsoft Office file types. Other alternatives include Zoho Workplace and Calligra Suite.



You install compiled Linux software from packages. Package managers -- which might be distribution-specific, depending on which one you use -- maintain software. Distributions derived from RHEL use package managers such as YUM and DNF, while those derived from Debian often use APT.

For example, the first command below installs the Nmap port scanner on a Red Hat-derived distribution, and the second installs it on a Debian-derived distribution:

```
$ sudo dnf install nmap
```

```
$ sudo apt install nmap
```

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8. Know where files are stored

Like Windows, Linux organizes files in specific locations. The Filesystem Hierarchy Standard enforces file management standardization across Linux distributions. This enables applications and users to know which directories hold configuration files, user data and system log files.

The three most crucial directories are the following:

1. `/etc` holds configuration files.
2. `/home/{username}` holds user-specific files and represents the private home directory.
3. `/var/log` holds system and service log files.