



# An Introduction to Linux

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# Introduction To Linux

- What is Linux and where did it come from ?
- Who uses Linux ?
- Co-existing with Windows
- What Hardware will I need ?
- Demonstration Install from Live DVD
- Exploring the Linux Desktop and application programs
- Questions

## What is Linux ?

Linux, more correctly called GNU/Linux, is an operating system that was initially developed for Intel x86 based personal computers and is now also available for 9 other computer architectures (Debian distribution)

A Linux distribution (distro) is a software collection which includes the Linux kernel, selected GNU utilities and application programs.

Different distributions are intended for a particular audience and kept up to date by the distribution maintainers.

Linux software is often categorised as Free and Open Source Software (FOSS), which allows the source code to be freely used, modified and distributed according to the terms of the relevant license.

## Where did Linux come from ?

Linux is a Unix work alike, written from scratch.

During the 1970s to the mid eighties, many US research and academic institutions started commercialising their software thus making the source code “closed source”

Some of the staff of these institutions were dissatisfied with this turn of events, and in 1982 Richard Stallman at MIT started the GNU project to organise the creation of an operating system freely available to anyone.

By the beginning of the 1990s, the GNU project had completed most of the supporting software utilities and other programs needed for an operating system – except the kernel.

In 1991, Linus Torvalds began a writing a terminal emulator as a stand alone program running on an IBM PC with a 386 CPU. This rapidly developed into an operating system kernel which became known as the Linux kernel, and was released under the GNU GPL license in 1992.

In 1993, the first “Mainstream” distributions, namely Slackware and Debian, began releasing their software which included the GNU tools, the Linux kernel, and application software.

## Who uses Linux ?

The City Government of Munich - around 14,000 desktops migrated to LiMux, a customised version of Debian.

Around 9000 computers converted to Linux and OpenOffice in the School district of Geneva, Switzerland.

The United States Department of Defense uses Linux – “the U.S. Army is “the” single largest install base for Red Hat Linux.

LSE – The London Stock Exchange uses the Linux based Millenium Exchange software for its trading platform

DreamWorks – DreamWorks Animation adopted the use of Linux since 2001, and uses more than 1,000 Linux Desktops and more than 3,000 Linux servers.

NASA has migrated the International Space Station from Windows XP to Debian 6.

Both CERN and Fermilab use Scientific Linux in all their work; this includes running the Large Hadron Collider, the Dark Energy Camera and the 20,000 internal servers of CERN.

France’s national Police Force, the National Gendarmerie, started moving their 90,000 desktops from Windows XP to Ubuntu in 2007 over the concerns over additional training costs of moving to Windows Vista, and following the success of OpenOffice roll-outs. The migration should be completed in 2015. The force have saved over €50 million on software licensing between 2004 and 2008.

## Coexisting with Windows

If you want to install Linux on the same computer as Windows (dual boot) I have found it would be a good idea to ...

- Install Windows first, if not already installed
- Clean out unwanted files and defragment the Windows hard disks
- Create a ***known good image backup*** of your Windows installation
- Run chkdsk on your Windows disks
- For Windows 8 and later, turn off fast boot.
- If you want to shrink the Windows partition, you can use Windows Disk Management Tools or allow the Linux Installer to do this for you.
- Linux installers will set up the NTFS Windows file system to run disk checking routines at the next boot.

## What hardware do I need ?

### *Linux Basic Hardware Requirements:*

Generally lower hardware requirements compared to Windows. A typical requirement would be 2 GHz CPU, 1 GB RAM and 10 GB Hard disk space.

You will need to assess disk space required for your usage and allow for more storage space for large collections of music, videos etc.

If upgrading an existing computer, extra memory usually gives best effect.

# Demonstration Install

## Using a Live DVD

A Live DVD is a bootable version of a Linux distribution, designed to allow users to try out Linux on their own computer without affecting the existing software installed on it. It also provides a convenient method for installing Linux.

A live DVD can be downloaded from your chosen distributions' website or an authorised mirror as a `.iso` file, ready for burning to a blank DVD.

Can be used as a working desktop for general familiarisation.

In this demonstration, we will be using a live DVD to install Linux Mint 17 MATE edition on a virtual machine which has an installation of CentOS already installed.



## Useful Links for Linux ...

*Comprehensive information on Linux Distributions* - **distrowatch.com**

*Free Software* - **gnu.org**

*Open Source Software* – **opensource.org**

## Interesting Background References ..

**Open Sources** - A compilation of articles edited by Chris DiBona, Sam Ockman and Mark Stone

**Rebel Code** – by Glyn Moody

**Hackers** – by Stephen Levy