



# Debian: A Linux based operating system for all purposes

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## Introduction

Linux Operating System became popular among computer users at the end of the 1990s. Many developing countries have adopted Linux operating system for education and e-governance to avoid the financial burden of proprietary software. The advent of Ubuntu as a user-friendly Linux changed the history of Linux Desktop. With this, even home users started to install and use the Linux Operating System on desktop and laptop computers. Debian Linux project (<https://www.debian.org/>) is a community-owned project and follows the principles of Free and Open Source software (FOSS). Modern and popular Linux operating systems like Ubuntu derived from Debian project (“Debian derivatives,” 2018). Debian project is unique among other Linux projects because of its extensive community support, large package repositories and free project management style. Besides, Debian Linux possesses a lot of useful features suitable for both new and expert user groups.

## An overview of Debian Linux

The Debian project initiated by Ian Murdock on August 1993. The first release of the operating system rolled out in January 1994.

The name Debian coined by blending the first name of his then-girlfriend Debra Lynn and the first name of Ian Murdock (“A Brief History of Debian,” 2017). Three versions of Debian available; Old Stable, Stable and Experimental. The stable release of the operating system comes out every two years. The old Stable release is the previous version. The experimental release is the testing version of the Debian release. The Debian project follows both the numbering scheme and the code name for all releases. The code names borrowed from popular Toy Story series of films (“Debian releases and names,” 2018). For example, Debian version 9 released in 2017 and its code name is ‘Stretch’. Raul Silva designed the Debian “swirl” logo in 1999. Many popular Linux distributions had derived from the Debian project. The popular Ubuntu Linux inspired from Debian project. As per the Distro Watch website, 143 active Debian derivatives (“Debian,” 2018). Debian package repositories contain 51000 application packages (“Reasons to Choose Debian,” 2017), it means that users can make available software for any purpose.

## Availability of installation images

Users can download installation images



support a range of hardware architecture like amd64, arm64, i386 etc. The availability of installation images suitable for different types of hardware architecture is helpful for both Linux geeks and ordinary people. Debian offers more options for Linux geeks to play and try. Users can select and try multiple desktops. Institutions and home users can use Debian with any computers; server, desktop, and laptop. Debian is suitable to use with hardware with old/light architecture (e.g. i386, ARM).

Debian download images are available for online and offline installation. Users having a poor Internet connection can choose CD/DVD image for installation. CD and DVD images contain a desktop with essential applications for users. The standard CD and DVD images of Debian offer applications for day to day computing purposes like an office suite, media player, image burner etc. 'Netinst' (Net Installer) image is suitable for Debian users with the excellent Internet connection. Net installer images are bare-bones, and which contains standard Debian programs. The convenience of the net installer image is that the user can install Debian Linux from scratch including desktop environments (e.g. GNOME, MATE, XFCE) and applications.

Debian installation images can be download using different methods like HTTP, FTP, BitTorrent, jigdo. Download servers available from various countries and fast download is possible. Debian CD and DVD can be bought from vendors.

Standard images of Debian contain only Linux installer. Live install images are also available for download. Live DVD of Linux

is convenient for users to try Linux without installation. Live DVD images available with a range of desktops like cinnamon, gnome, KDE, MATE, LXDE, Xfce. The standard installer of Debian image available with two desktops; Xfce and LXDE. Debian offers Linux images with various desktop environments from the single project. Ubuntu maintains the stand-alone projects for other desktop environments; Xubuntu, Lubuntu, Ubuntu MATE etc.

### **Installation of Debian**

Installation is the hard nut to crack for Linux beginners. Text or expert mode installer is one of the prime reason that keeps away newbies from Linux. Partition of the hard disk is very confusing for Linux beginners. The earlier versions of Debian followed text mode installation. The graphical installer is available with the recent releases of Debian. The graphical installer of Debian Linux has reduced the difficulty of the installation process to a great extent. Beginners may feel that the installation process of Debian is not smooth like Ubuntu Linux. Ubuntu has automated the partition process while installing Linux along with another operating system (Dual Boot). The Ubiquity installer assigns and creates disk partition for Ubuntu without disturbing the default operating system.

### **Diverse desktops environments**

Debian offers all modern desktop environments, and users can download the desired installation images. The desktops of Debian available without any customisations (bare-bones). Linux desktop facilitates graphical interface for users including



application launcher, file manager, panel, menu, widgets and other goodies. Desktop environment increases the user-friendliness of Linux Operating System. Specific Linux Desktop environments resemble Microsoft Windows graphical interface, and such desktops are suitable for new Linux users familiar with the Windows operating system. Users can download Debian Live DVD images with Cinnamon, GNOME, KDE, LXDE, MATE, XFCE desktop environments. Each desktop environments consume the different quantity of computing resources; processor power and memory. LXDE and XFCE desktop belongs to the lightweight category and suitable to work on low profile computers. Lightweight Linux is ideal for reviving old computers or new computers with low profile processors like Intel Celeron, Pentium, Atom series processors(Stieben, 2016). Debian Linux adds desktop environments without many customisations, and so they can offer excellent performance. For example, considerable differences in performance between Debian MATE and Ubuntu MATE. Ubuntu MATE comes with bells and whistles to add the attractiveness of desktop(Bhartiya, 2014), (Ubuntu MATE Team, 2018). Debian offers the vanilla flavour of the MATE Desktop and faster than Ubuntu MATE. Debian user can install and accommodate other revolutionary desktops like Enlightenment.

### **Areas of use**

Debian is suitable to use for personal and production purposes. Debian installer images can be used to install on laptops, desktops, workstations, and server computer. The user

can select Debian Linux with an ideal desktop environment to power up the computer. Consider lightweight desktop environments like LXDE and XFCE to work with low-end computers. Debian Linux has no server edition, and the user can install the core packages with or without a desktop environment.

Libraries in developed and developing countries have been switching to Free/Open Source software and a significant portion of the market occupied by Open Source software(Breeding, 2017). Library-specific Open Source software prefer Linux operating system mainly Debian/Ubuntu. Open Source software running on the Linux operating system reduces total cost ownership of the software implementation.

### **Conclusion**

Free and Open Source software offers a lot of choices for users. User community should be aware of the features of the projects to enjoy the best of the Free and Open Source software. Debian Linux project is one of the examples of community participation in operating system development. The project could successfully roll out stable Linux operating systems and provide long-term community support. The advantage of Debian is that it offers compatibility with a wide range of computing devices like a server, desktop, workstation, laptop, embedded system and mobile device.

Debian Linux has not received much attention from the user community due to the lack of promotion. Ubuntu Linux derived from Debian project and received much acceptance from all range of users from corporate, academic and professionals. Debian



Linux opens up more space for customisation and innovation for experts and users. Debian follows a strict release schedule and ensures a stable distribution of Linux (Wallen, 2018).

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