# Things You Need to Know About Linux Before Starting Linux

**Early Roots (1960s–1980s)**

- **Unix (1969–1970s):** Developed at AT&T Bell Labs, it became a multiuser, multitasking operating system. Unix laid the groundwork for Linux. However, UNIX was not free, which created a need for **open-source** free software for everyone.

**The Birth of Linux (1991)**

- **Linus Torvalds** started developing the Linux kernel as a hobby project.

- **First Release:** On **August 25, 1991**.

**Growth & Open Source (1990s)**

- **GNU Project:** Richard Stallman's **Free Software Foundation (FSF)** had already started the **GNU Project**, aiming to create free software to replace proprietary Unix. It provided essential tools like **compilers, libraries, and the shell (bash)**.

- **Linux + GNU:** The Linux kernel was paired with GNU software, creating a complete operating system.

**Widespread Adoption (2000s–Present)**

- **Linux Distributions:** Popular distributions like **Red Hat, Debian,** and **Ubuntu** made Linux more accessible, catering to a broad audience, including developers, businesses, and home users.

- **Web Servers & Data Centers:** Linux became the preferred choice for web servers and data centers, known for its **reliability, high performance,** and **cost-efficiency**.

- **Android:** Based on the Linux kernel, the **Android** operating system grew to become the leading mobile OS, expanding Linux's influence in the mobile sector.

- **Git:** Created by **Linus Torvalds**, **Git** emerged as a version control system and became widely adopted in the software development community.

- **Ongoing Impact:** Linux continues to excel in diverse fields such as **server management, cloud computing,** and **embedded systems**, and remains a cornerstone of the open-source movement.

**Basic Features of Linux**

- **Portable:** The Linux kernel and application programs can be installed on any type of hardware platform.

- **Open Source:** Linux source code is **freely available** and completely free.

- **Multi-User:** Linux has a **multi-user system**, which means multiple users can access it at the same time.

- **Shell:** Linux provides a **special interpreter** that can be used to execute commands for the operating system.

- **Security:** Linux is **highly secure** and a widely used OS.

**Comparison Between Unix and Linux**

- **Unix** is **proprietary**, whereas **Linux** is **open-source** and **free**.

- **Unix** is **older**, developed in the **1970s**; **Linux** was created in **1991**.

- **Unix** is typically used in **large enterprise systems**, whereas **Linux** is used in **servers, desktops,** and **mobile devices**.

- **Unix** has **commercial versions** (e.g., **AIX, Solaris**), while **Linux** is available as **free distributions** (e.g., **Ubuntu, Red Hat**).

**Popular Linux Distributions**

1. **Red Hat Enterprise Linux**

2. **Fedora Linux**

3. **Debian Linux**

4. **SUSE Enterprise Linux**

5. **Ubuntu Linux**

**Layered Architecture**

Linux follows a layered system architecture consisting of:

- **User Layer** (Users and Applications)

- **Shell Layer** (Command Interpreter)

- **Kernel Layer** (Core of the OS)

- **Hardware Layer** (Interacts with physical components)