

WELCOME TO: MODULE 1

UNDERSTANDING LINUX CONCEPTS

What is Operating System?

As per Wikipedia

An operating system is system software that manages computer hardware and software resources, and provides common services for computer programs

In simple words

An operating system (OS) is software that acts as a middleman or a bridge between computer hardware and the computer user. It provides a user interface and controls the computer hardware so that software can function

Types of Operating Systems:

1. **Desktop Operating Systems**, e.g., Microsoft Windows, macOS, and Linux such as Ubuntu
2. **Server Operating Systems**, e.g., Windows Server, Linux distributions like CentOS, Red Hat Enterprise Linux
3. **Mobile Operating Systems**, e.g., Android, iOS, Windows Mobile
4. **Embedded Operating Systems** used in devices like routers, smart TVs, automobiles, home appliances etc.
5. **Real-Time Operating Systems (RTOS)** used in critical systems like medical equipment, car ECUs, aerospace, defense, network firewalls, home security system etc.

WHAT IS LINUX?



Linux is an Operating System which sits in the middle of your hardware and users



Unix vs. Linux

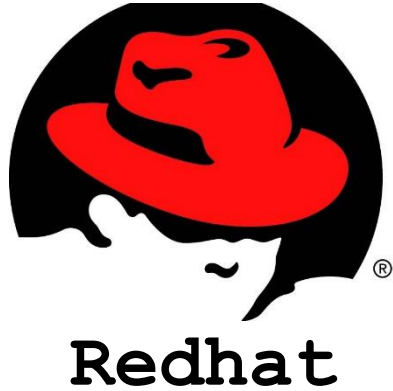
- Unix was first developed for multi-user and multi-tasking in mid-1970 in Bell Labs by ATT, GE and Massachusetts institute of Technology
- Then born Linux in 1991 by Linus Torvalds
- Linux is mostly free
- Linux is open source
- Unix is mostly used by Sun as Solaris, HP-UX, AIX etc.
- Linux is used by many developers community or companies (Redhat, CentOS, Debian) etc.
- Unix comparatively supports very fewer File systems
- Linux can be installed on a wide variety of computer hardware, ranging from mobile phones, tablets, video game consoles, to mainframes and supercomputers.

114 LINUX COMMANDS

LINUX VS. WINDOWS

	Linux	Windows
Price	Free	\$\$\$
Ease	Not user-friendly	User friendly
Reliability	Very reliable. Often runs for months or years	Often requires reboot
Software	Mostly enterprise level softwares	Much larger selection of softwares e.g. office, games, utilities etc.
Multi-tasking	Best for multi-tasking	Multi-tasking is available but with very high cpu or memory resources
Security	Very secure	Some what secure
Open source	Open to public	No an open source OS

LINUX DISTRIBUTIONS



Linux Users

- US Government and Agencies (National, State, Federal and International)
- NASA
- Health Care
- The Bullet Trains in Japan runs at the speed of 150-215 m/h
- Traffic Control
- Financial Institutes e.g. NYSE
- Entertainment industries (Cinemas, Production houses etc.)
- World e-commerce leaders, including Amazon, eBay, PayPal, and Walmart run their platform on Linux
- Other fortune 500 companies e.g. Google, IBM, McDonalds, Facebook etc.