

Introduction to Linux



About Me

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Introduction

What is Linux? Who created Linux?

Why Linux?

How many distributions?



Topics Today

Installing Linux

Must Know Linux/Unix Commands

File Permissions in Linux/Unix

The VI Editor

Shell Script

Monitoring Tools

```
sh... ...c/apache2/users -- -bash ~/Sit
12 days, 23:27, 2 users, load average:
2 running, 331 sleeping, 0 stopped,
1.2 sy, 0.0 ni, 91.3 id, 0.0 wa, 0.0 hi
total, 52484596 used, 13659924 free, 349
total, 167028 used, 39234440 free, 3007

NI VIRT RES SHR S %CPU %MEM TIME+
0 376m 189m 49m R 100 0.2 0:22.72
0 347m 57m 24m S 42 0.1 0:01.89
0 352m 87m 50m S 30 0.1 0:50.74
0 351m 85m 50m S 24 0.1 0:44.80
0 352m 86m 49m S 6 0.1 0:48.08
0 10.4g 4.8g 6684 S 4 7.7 40255:22
0 23460 1844 1172 R 1 0.0 0:00.10
0 0 0 0 S 0 0.0 74:28.49
0 336m 60m 38m S 0 0.1 0:17.70
0 70188 3572 2796 S 0 0.0 0:00.03
0 352m 87m 50m S 0 0.1 0:36.99
0 10656 716 592 S 0 0.0 16:29.88
0 0 0 0 S 0 0.0 0:01.11
0 0 0 0 S 0 0.0 69:52.26
0 0 0 0 S 0 0.0 0:53.59
0 0 0 0 S 0 0.0 4:36.53
0 0 0 0 S 0 0.0 0:21.33
0 0 0 0 S 0 0.0 19:39.70
0 0 0 0 S 0 0.0 3:50.20
0 0 0 0 S 0 0.0 0:33.27
0 0 0 0 S 0 0.0 12:33.48
0 0 0 0 S 0 0.0 3:50.69
0 0 0 0 S 0 0.0 0:20.09
0 0 0 0 S 0 0.0 0:00.00
0 0 0 0 S 0 0.0 6:52.39
0 0 0 0 S 0 0.0 3:36.69
0 0 0 0 S 0 0.0 0:17.17
0 0 0 0 S 0 0.0 0:00.00
0 0 0 0 S 0 0.0 7:44.92
0 0 0 0 S 0 0.0 3:40.68
0 0 0 0 S 0 0.0 0:14.83
0 0 0 0 S 0 0.0 0:00.00
0 0 0 0 S 0 0.0 5:52.24
0 0 0 0 S 0 0.0 3:31.70
0 0 0 0 S 0 0.0 0:14.86
0 0 0 0 S 0 0.0 0:00.00
0 0 0 0 S 0 0.0 7:51.09
0 0 0 0 S 0 0.0 3:36.27
0 0 0 0 S 0 0.0 0:11.09
0 0 0 0 S 0 0.0 0:00.00
0 0 0 0 S 0 0.0 5:38.24
0 0 0 0 S 0 0.0 3:30.63
0 0 0 0 S 0 0.0 0:11.61
0 0 0 0 S 0 0.0 8:15.39
0 0 0 0 S 0 0.0 3:34.46
```

Extra Topics

Linux Load Balancer (HAProxy)

GitLab



What is Linux? Who created Linux?

Linux is an operating system or a kernel which germinated as an idea in the mind of young and bright **Linus Torvalds** when he was a computer science student (1991). He used to work on the UNIX OS (a proprietary software), and thought that it needed improvements.



Why Linux?

UNIX is called the mother of operating systems which laid out the foundation to **Linux**. Unix is designed mainly for mainframes and is in enterprises and universities .While Linux is fast becoming a household name for computer users , developers and server environment. You may have to pay for a Unix kernel while in Linux it is free.

How many distributions?

There are hundreds of Linux operating systems or Distributions available these days. Many of them are designed with a specific purpose in mind. For example, to run a web server or to run on network switches like routers, modems etc.

How many distributions?



Popular Linux Distributions

CentOS It is one of the most used Linux Distribution for enterprise and web servers. It is a free enterprise class Operating system and is based heavily on Red Hat enterprise Distro.

Debian Debian is a stable and popular non-commercial Linux distribution. It is widely used as a desktop Linux Distro and is user-oriented. It strictly acts within the Linux protocols.

RedHat enterprise Another popular enterprise based Linux Distribution is Red Hat Enterprise. It has evolved from Red Hat Linux which was discontinued in 2004. It is a commercial Distro and very popular among its clientele.

Ubuntu This is the third most popular desktop operating system after Microsoft Windows and Apple Mac OS. It is based on the Debian Linux Distribution and it is known for its desktop environment.

Installing Linux (Debian)



<https://www.debian.org>

Linux File System

In Microsoft Windows, files are stored in folders under different data drives like C: D: E: .

But, in Linux, files are ordered in a tree structure starting with the root directory.

Directory Structure

/

/etc

/bin

/home

/usr

/var

/tmp

Must Know Linux/Unix Commands

id Show login Information

passwd [name [password]] Change the password or allow (for the system administrator) to change any password.

ls [options] List directory contents.

cp [options] source destination Copy files and directories.

pwd Display the pathname for the current directory.

Must Know Linux/Unix Commands

cat [filename] Display file's contents to the standard output device (usually your monitor).

touch filename Create an empty file with the specified name.

grep [options] pattern [filename] Search files or output for a particular pattern.

tail [options] [filename] Display the last n lines of a file (the default is 10).

Must Know Linux/Unix Commands

rm [options] directory Remove (delete) file(s) and/or directories.

mv [options] source destination Rename or move file(s) or directories.

cp [options] source destination Copy files and directories.

mkdir [options] directory Create a new directory.

rmdir [options] directory Delete empty directories.

Must Know Linux/Unix Commands

df [options] Display used and available disk space.

du [options] Show how much space each file takes up.

tar [options] filename Store and extract files from a tarfile (.tar) or tarball (.tar.gz or .tgz).

man [command] Display the help information for the specified command.

history Show last History command

clear Clear a command line screen/window for a fresh start.

File Permissions in Linux/Unix

Permissions

User Group Other

r = read permission

w = write permission

x = execute permission

- = no permission

File Permissions Commands

chmod [options] mode filename

Change a file's permissions.

chown [options] filename Change

who owns a file.

Communication in Linux/Unix - Ping , SSH , Telnet, nslookup

ping google.com

telnet localhost 80

ssh username@ip-address or
hostname

nslookup google.com

Managing Processes in Linux/ Unix : top, ps, kill, df, free

top Displays the resources being used on your system.

ps To check all the processes running under a user.

kill This command terminates a running processes on a Linux machine.

df This utility reports the free disk space(Hard Disk) on all the file systems.

free This command shows the free and used memory (RAM) on the Linux system.

The VI Editor

- Command mode [**esc**]
- Insert mode [**i**]

Shell Script

Monitoring Tools

Linux Loadalancer (HAProxy)

GitLab

Question?

Thanks :)

<https://www.packetlove.com>

<http://www.dummies.com/computers/operating-systems/linux/common-linux-commands/>

<https://www.guru99.com/linux-regular-expressions.html>

<http://www.techbizy.com/best-linux-os/>



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