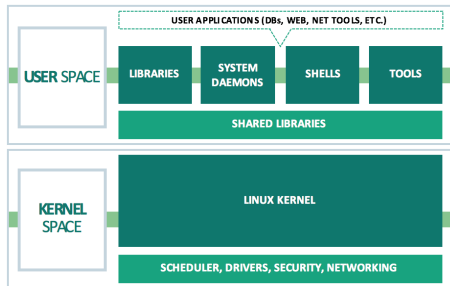
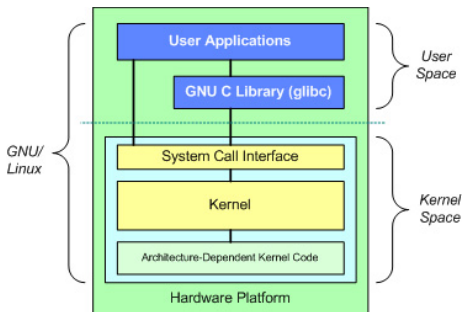


# Introduction to Linux

December 4, 2018

# What is Linux?

# The kernel



## Richard Stallman 1983



## Linus Torvalds 1992



# What is free software?

## Free software vs. Proprietary Software

http:

[//audio-video.gnu.org/video/TEDxGE2014\\_Stallman05\\_LQ.webm](http://audio-video.gnu.org/video/TEDxGE2014_Stallman05_LQ.webm)

## 4 essential freedoms:

- Freedom to run the program as you wish
- Study the source code of the program and change it
- Freedom to redistribute exact copies
- Freedom to redistribute with changes

# Free Software == Real Research

Accessibility & Reproducibility

# Stats:

- The top 500 supercomputers run on Linux
- The ISS migrated key functions to Linux
- Most web servers run on Linux

# Distros:

Over a 1000 of them!

## Debian-based Distros

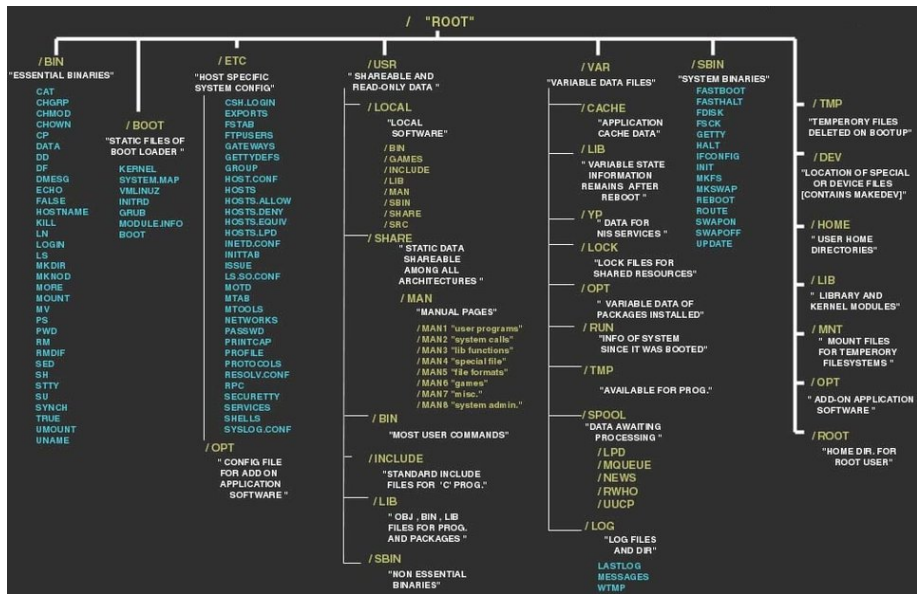
- Ubuntu and its spins:
  - Lubuntu
  - Kubuntu
  - Xubuntu
  - Peppermint
- Linux Mint

## Red-Hat-based Distros

- Fedora
- CentOS



# Structure



*Don't fear the terminal!*

- `man ls`
- `man curl`
- `ls -help` / `ls -h`

# sudo

Superuser do

cd

Change Directory

## List

```
ls -a
```

```
ls -l
```

```
ls -la
```

total	4568								
-rw-rw-r--	1	main	main	58239	Oct	26	22:54	433px-TUX <sub>G2</sub> .png	
-rw-rw-r--	1	main	main	5677	Oct	26	23:00	gnu.jpeg	
-rw-rw-r--	1	main	main	2238058	Oct	26	23:23	gnu.png	
-rw-rw-r--	1	main	main	14799	Oct	26	21:26	linuxpresentation.html	
-rw-rw-r--	1	main	main	1663	Oct	26	21:30	linuxpresentation.md	
-rw-rw-r--	1	main	main	10454	Oct	26	23:41	#linuxpresentation.org#	
-rw-rw-r--	1	main	main	1149	Oct	26	23:20	linuxpresentation.org	
-rw-rw-r--	1	main	main	872	Oct	26	23:01	linuxpresentation.org~	
-rw-rw-r--	1	main	main	2284440	Oct	26	23:32	linuxpresentation.pdf	
-rw-rw-r--	1	main	main	2794	Oct	26	23:32	linuxpresentation.tex	
-rw-rw-r--	1	main	main	2791	Oct	26	23:31	linuxpresentation.tex~	
-rw-rw-r--	1	main	main	0	Oct	26	15:38	modified.txt	
-rw-rw-r--	1	main	main	0	Oct	26	16:04	test2.txt	
-rw-rw-r--	1	main	main	0	Oct	26	16:04	test3.txt	
-rw-rw-r--	1	main	main	0	Oct	26	16:04	test.txt	
-rw-rw-r--	1	main	main	16720	Oct	26	22:52	TUX <sub>G2</sub> .svg.png	

## Make Directory

# touch

```
touch test.txt  
touch test2.txt  
touch test3.txt
```

```
ls | grep txt
```

```
modified.txt  
test2.txt  
test3.txt  
test.txt
```



```
mv test.txt modified.txt
```

```
ls | grep txt
```

```
modified.txt  
test2.txt  
test3.txt
```

```
cp test.txt test4.txt
```

```
ls | grep txt
```

```
modified.txt  
test2.txt  
test3.txt
```

```
find -name "*.txt"
```

```
./modified.txt
```

```
./test2.txt
```

```
./test3.txt
```

```
tar cvf files.tar test2.txt test3.txt  
ls | grep tar
```

```
test2.txt  
test3.txt  
files.tar
```

# curl

curl wttr.in

```
echo "hello there!" > test3.txt  
echo "This is a file" > test3.txt  
grep "there" test3.txt
```

This is a file

use single quotes!

```
ps aux | grep nano | grep -v grep | awk '{print $2}' | xargs $2
```

7054

# Installing software

## apt-get update

Update your repository, so apt will know there are programs to be upgraded.

## apt-get upgrade

Upgrade your programs

## apt-get install



# apt-get remove

Basic terminal-based text editor, probably the most user-friendly.

htop

- h
- F3
- F5
- F9
- q

# Funny terminal stuff

- telnet towel.blinkenlights.nl
- cowsay
- fortune-mod
- cmatrix
- hollywood
- thefuck
- bastet
- aview

youtube-dl