

Introduction to Linux

Linux Essentials
Session-1



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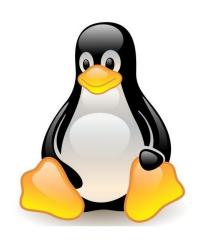




Why Linux?

Where Linux?

When Linux?





Why Linux?



















reboots



★ Linux is everywhere

^{* &}lt;a href="http://www.linuxandubuntu.com">http://www.linuxandubuntu.com













30 Companies and Devices Running on GNU/Linux





1. Google

The services of which includes search, cloud computing and online advertising technologies runs on Linux.

2. Twitter

Twitter, famous online social networking and micro-blogging site is Powered by Linux.

3. Facebook

Facebook, one of the most famous and most widely used Social Networking service runs on the same platform.

4. Amazon

An American based international company which deals with International Online Retailing is in the list of Linux powered Company.

5. IBM

IBM (International Business Machine Corporation) the American based company which for sure don't requires any introduction, is again powered by Linux.





6. McDonalds

The world's largest chain of hamburger fast food restaurant uses GNU/Linux (Ubuntu) too.

7. Submarines

The submarines in the United State Navy are controlled by same platform.

8. NASA

National Aeronautical and Space Administration, The United Nations Space program widely uses Linux in many of their programmes.

9. Watches

Most of you would not be knowing that there are Linux Powered Watches in the market, already. The watch developed by IBM running Linux.

10. Mobile Devices

True, you all know that Linux is powering Mobile Phones, Tablets and Kindle.





11. Space

A Specific Linux Distro (Debian) is already in the space. Debian led all the rest.

12. Raspberry pi

The business card sized computer designed for electronic projects as well as desktop computing which is very cheap in cost and is fully functional. Raspberry is a landmark in Linux Development.

13. Desktop Computing

Though a little late, Linux made a notable presence in the desktop computing market. In school and academics as well as in government offices Linux are being widely used, these days.

14. Corporates

The corporate offices are using Linux and finds it more productive than any other alternatives.







New York Stock Exchange (NYSC) which provides means for buyers and sellers in order to trade shares of stock in companies registered for public trading relies solely on Linux.

16. Traffic Controlling

The Traffic controlling system in most of the countries be it Road Traffic or Air Traffic Linux proved to be the best than any other available alternative.

17. Nuclear Projects

When it comes to Nuclear Ambitious projects, Linux is the best option. One of such OS is QNX, which lately is acquired by Blackberry Ltd.

18. Bullet Trains

The Bullet Trains in Japan runs at the speed of 240-320 km/h. All train tracking, maintenance, scheduling and controlling is Linux based.







19. Internet Hosting

More than 70% of Internet Hosting and service providers are Linux based. Thought this statistic is difficult to figure out but based upon the Linux compatible hardware sold, and demand for cross platform compatible hardware, the above statistics is a rough estimation.

20. Missiles and Weapons

The Missiles and destructive weapons of next generation is themed to be much advanced and Intelligent system than its predecessors. Well what else would have been its alternative.



When Linux?

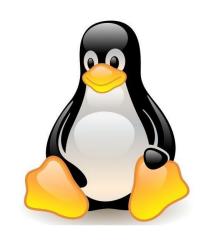








Linux Evolution



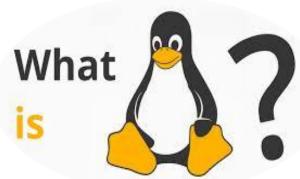


What is Linux?

- Free
- Open-Source
- OS













MEMORABLE LINUX EVENTS

CELEBRATING 30 YEARS OF GNU LINUX

THE FREE SOFTWARE **FOUNDATION** IS CREATED BY RICHARD STALLMAN TO PROMOTE SOFTWARE FREEDOM AND FUND THE **GNU PROJECT**



LINUS TORVALDS



LINUX DISTRIBUTIONS



LINUX BELGIUM IS CREATED AS THE BUSINESS INTERFACE TO THE LINUX COMMUNITY



THE FIRST ANDROID BASED SMARTPHONE IS LAUNCHED. **AFTER 2 YEARS** MOST SMARTPHONES ARE ANDROID BASED





30 YEARS OF

GNU HAVE BEEN

VERY EXCITING

AND CHANGED

THE FACE OF

THE PLANET.



debian











1985 1989 1991 1996 1998 1999 2000 2004 2005 2007 2008 2012 2013 2014 2015



GNU GPL VERSION 1 IS PUBLISHED TO **ENSURE ELECTRONIC RIGHTS AND** ALLOW COLLABORATION



LINUS LICENSES VERSION 0.99 OF LINUX UNDER THE GNU GPL "DEFINITLY THE BEST THING I EVER DID"



THE 'TUX' LINUX MASCOT WAS CREATED BY LARRY EWING



RED HAT **GOES PUBLIC** ON THE NASDAQ STOCK MARKET



UBUNTU LINUX DISTRIBUTION IS FOUNDED WITH AN INITIAL INVESTEMNENT OF 10M USD BY MARK SHUTTLEWORTH



THE GPLv3 IS CREATED TO ADDRESS ISSUES LIKE SOFTWARE PATENTS AND THE 'MICROSOFT PACT'



THE RASPBERRY PL IS INTRODUCED TO MAKE EMBEDDED LINUX MORE ACCESSABLE TO THE GENERAL PUBLIC, IN 3 YEARS **5 MILLION UNITS** ARE SOLD



THE DEDICATED LINUX EDUCATION CENTER IS OPENED IN DIEGEM.





Linus Benedict Torvalds



Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat (same physical layout of the file-system (due to practical reasons) among other things).

I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them:-)

Linus (torv...@kruuna.helsinki.fi)

PS. Yes - it's free of any minix code, and it has a multi-threaded fs. It is NOT protable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-(.





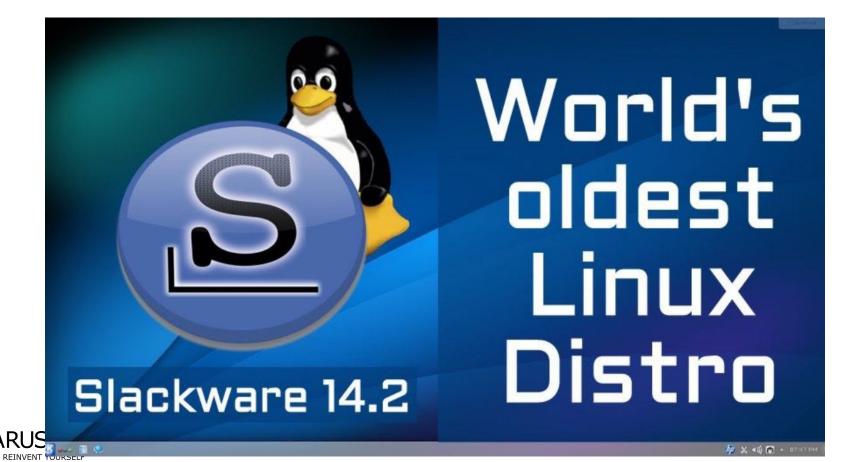




"Making Linux GPLed was definitely the best thing I ever did." Torvalds, L.



















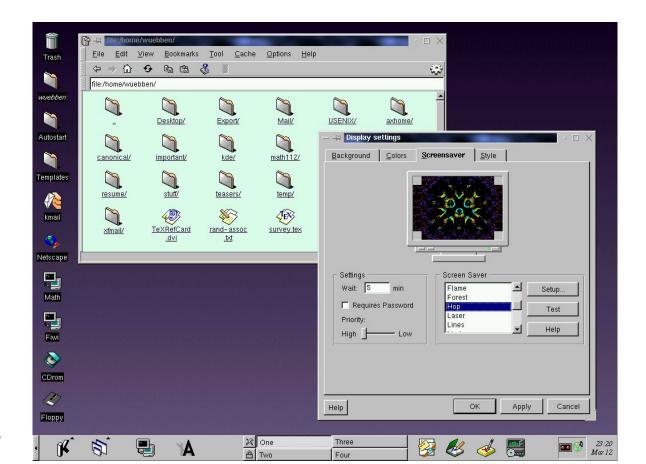




GNOME TM



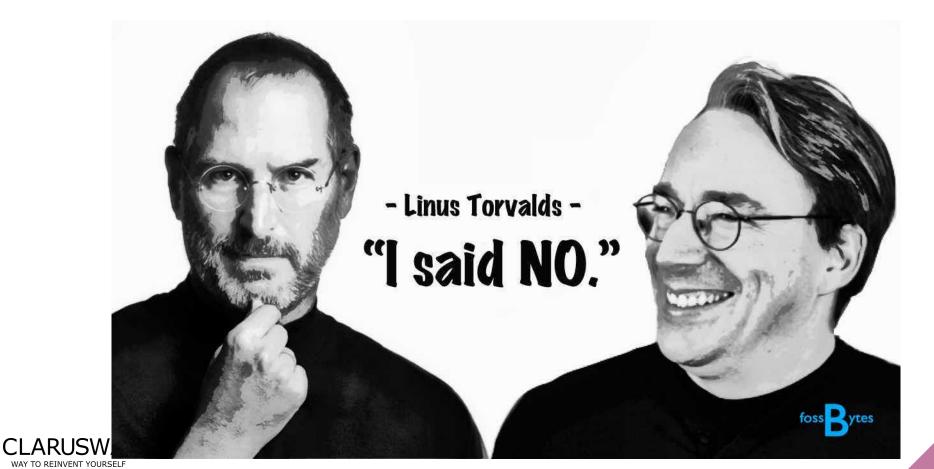




















```
--- GOOD
                     2003-11-05 13:46:44.000000000 -0800
    +++ BAD 2003-11-05 13:46:53.000000000 -0800
    @@ -1111,6 +1111,8 @@
 4 5 6 7
                     schedule();
                     goto repeat;
             if ((options == (__WCLONE|__WALL)) && (current->uid = 0))
8 9
                              retval = -EINVAL;
             retval = -ECHILD;
10
     end wait4:
11
             current->state = TASK_RUNNING;
```













































2014

Memorable Linux Events





"Microsoft loves Linux" -Satya Nadella, 2014

Microsoft V Linux









WSL 2 BRINGS

Linux Kernel in Windows 10

For Real!





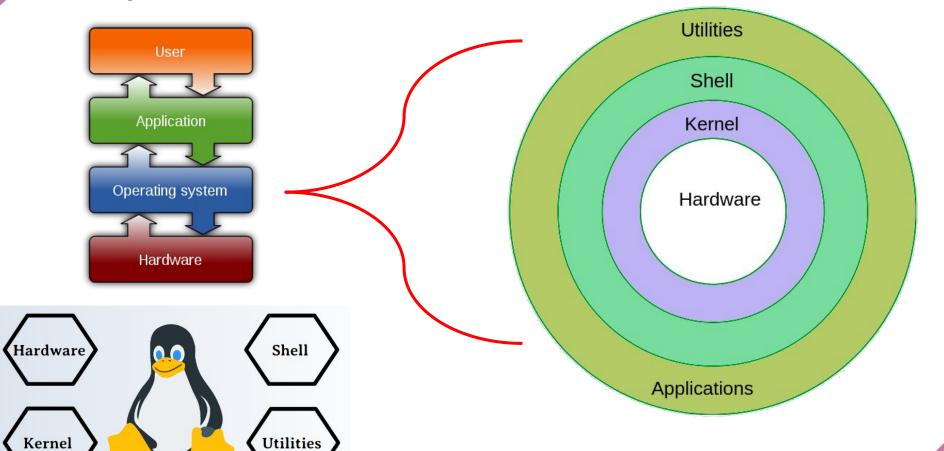
Kahoot!





Components of Linux



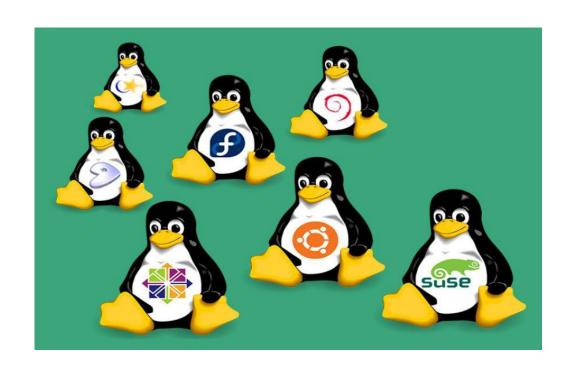


Components of Linux Applications User **Graphical Interface** Application X Server **GNU Core** Operating system Linux Kernel Hardware **Boot-Loader** Hardware Shell Hardware **Utilities** Kernel

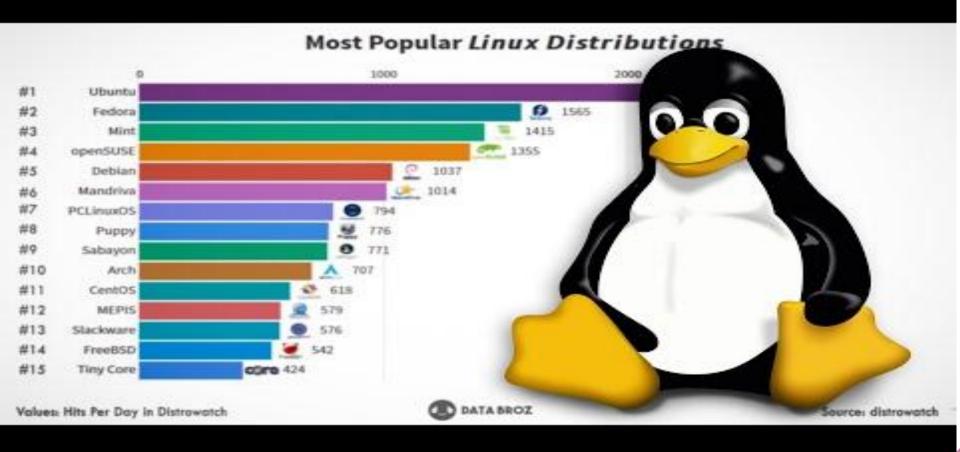
Popular Linux Distributions



- Debian
- <u>Ubuntu</u>
- Mint
- Manjaro
- openSUSE
- RedHat
- Fedora







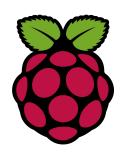
Linux Embedded Systems



Embedded System

An embedded system is a computer system that is dedicated to one or two specific functions.











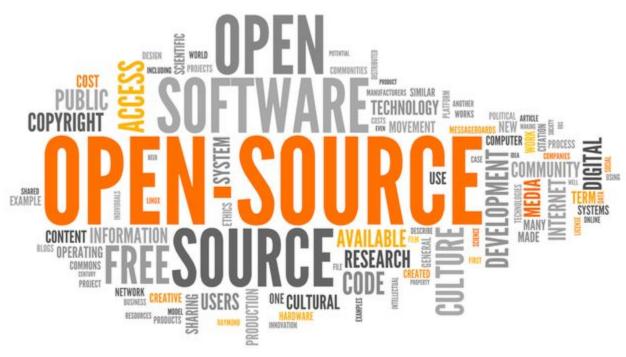
Major Open Source Applications





What is open-source





Open-source software is software with source code that anyone can inspect, modify, and enhance.



Desktop Applications





- 1. LibreOffice
- 2. VLC Media Player
- 3. GIMP
- 4. Shotcut
- 5. Brave
- 6. Audacity
- 7. KeePass
- 8. Thunderbird
- 9. FileZilla
- 10. Linux









Server Applications



- NGINX
- MySQL
- Samba
- ownCloud













Package Management Tools

 Contemporary distributions of Linux-based operating systems install software in pre-compiled packages, which are archives that contain binaries of software, configuration files, and information about dependencies.

- dpkg: Debian Package Manager
- apt-get
- rpm: Red Hat Package Manager
- yum: yellowdog updater modified







Free Software Foundation (FSF)

Open Software Initiative (OSI)





FSF and OSI

Free Software Foundation (FSF)

- The Free Software Foundation (FSF) is a nonprofit organization with a worldwide mission to promote computer user freedom.
- The FSF is working to secure freedom for computer users by promoting the development and use of free software and documentation.





FSF and OSI



Open Source Initiative (OSI)

- The Open Source Initiative (OSI) is a non-profit organization dedicated to the promotion of open-source software.
- OSI was founded in 1998 by Bruce Perens and Eric Raymond.







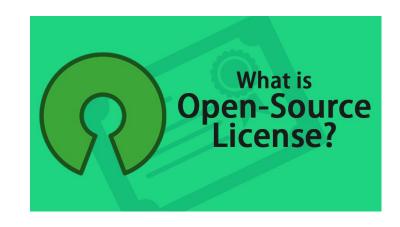
Open-Source Software and Licensing



Open-source Licensing



Open source licenses are licenses that comply with the Open Source Definition — in brief, they allow the software to be freely used, modified, and shared. To be approved by the Open Source Initiative (also known as the OSI), a license must go through the Open Source Initiative's license review process.



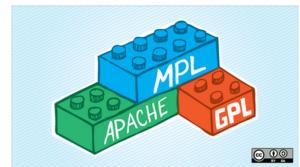


Open-source Licensing

Popular Licenses

The following OSI-approved licenses are popular, widely used, or have strong communities:

- Apache License 2.0
- BSD 3-Clause "New" or "Revised" license
- BSD 2-Clause "Simplified" or "FreeBSD" license
- GNU General Public License (GPL)
- GNU Library or "Lesser" General Public License (LGPL)
- MIT license
- Mozilla Public License 2.0
- Common Development and Distribution License
- Eclipse Public License version 2.0

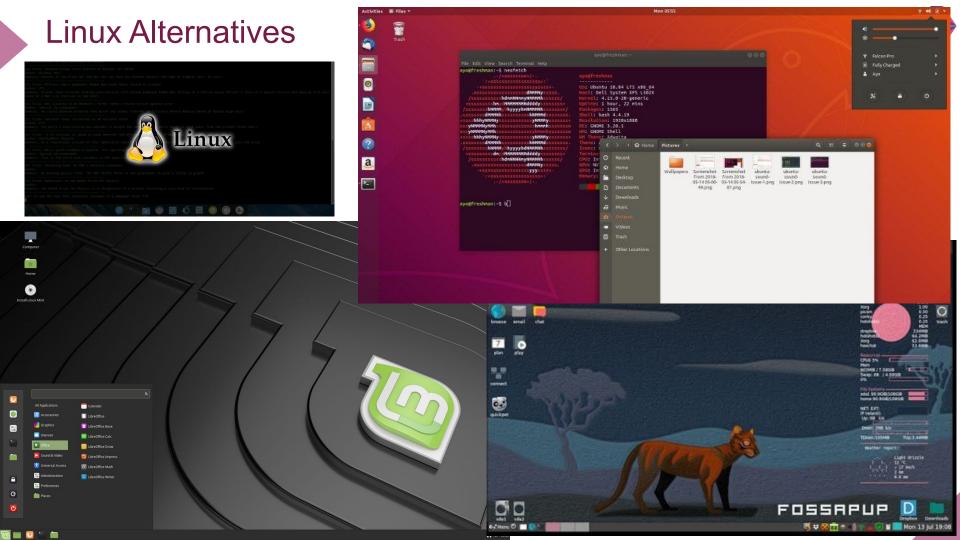






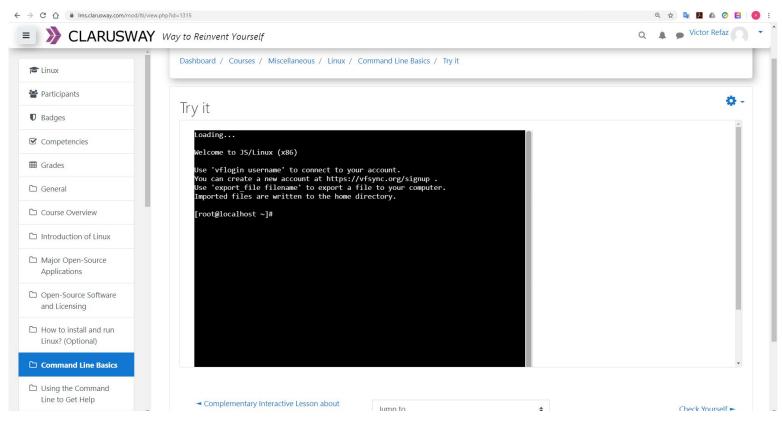
Using Linux on Different Platforms







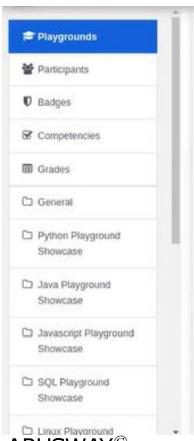
LMS: Try it







LMS: Playgrounds



```
X O
 Terminal
5 11
total 24
drwx----- 3 root root 4096 Feb 16 2020 /
drwxr-xr-x 1 root root 4096 Mar 20 15:12 ../
-rw-r--r-- 7 root root 3122 Feb 16 2020 .bashrc
-rw-r--r-- 6 root root 64 Feb 16 2020 .gitconfig
-rw-r--r-- 14 root root 148 Aug 17 2015 .profile
drwxr-xr-x 2 root root 4096 Feb 16 2020 5555/
5 ls
8
```



linuxzoo.net



Welcome to linuxzoo

assem Linux from the safety of your chair using a remote private linux machine with root access.

Welcome to linuxzoo

Duri serviceorment

Specified Lynux System Administration

Status: Normal, Service is running normally.

Look at the Our Environment link, and then Running Your Mechine for getting started.

Quick start hints: registerhoom, Join Queue, Seatch On tin Control table. Wait for europealtal book click the Connect table, and then click "beinet: linux/roo rest" (or type felter shurzoo net at your command prompt). Username root password secure.

Image	Username	Password
Linux Centos 7	root	Mediate
	arice	secure
Caine Forenaics 10.0	coeres	CHEN
Kali 2020-4	root	keli



FAQ for VNC: There are a few options to getting a remote graphical desktop. In "connect" you can click on Java VNC, which requires java 7 installed on your machine. JavaScript VNC is more flexable, but it may be slower (it is experimental). Some systems do not like you logging in graphically as root.

Centos 7 intro: Paths | BasicShell | Search

Limo tutoriate intro1 intro2 wildoord cormission site of essential admin out SELimo 1 SELimo 2 twell DNS clare Acache 1 Acache 2 los Mail Came to 0. Essentials | Basic | Search | Appusation | Systetic | once | MBR | GPT | FAT | NTES | FRitata | FRitools | Browser | Mock Exam |

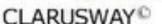
CPD: Cyteen | Paths | Files and headfall | Find and regex | Sort | Log Analysis

1a | 1b | 1c | 2 | 2 | 1da | 4b | 5 | 6 | Za | 6a | 6b | 9 | 10 | KAR

1s | 1b | 1c | 2 | 3 | 4s | 4b | 5 | 6 | 7 | 6s | Kali 2020-41

Linahut Quiz | Forums | Privacy Policy | Terms and Conditions

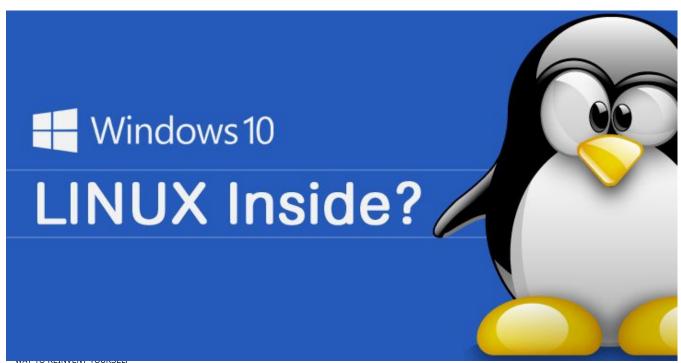
XMLZoo ActiveSQL ProsZoo SQLZoo Silte Links:

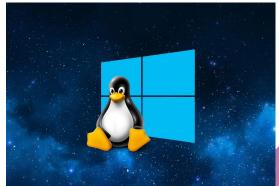


WAY TO REINVENT YOURSELF











Linux Distros on Virtual Machines

MacOS/Windows

https://www.virtualbox.org/wiki/Downloads



Windows



https://www.vmware.com/products/workstation-player/workstation-player-evaluation.html



Linux Distros on Virtual Machines



https://ubuntu.com/download/desktop



https://www.debian.org/distrib/netinst

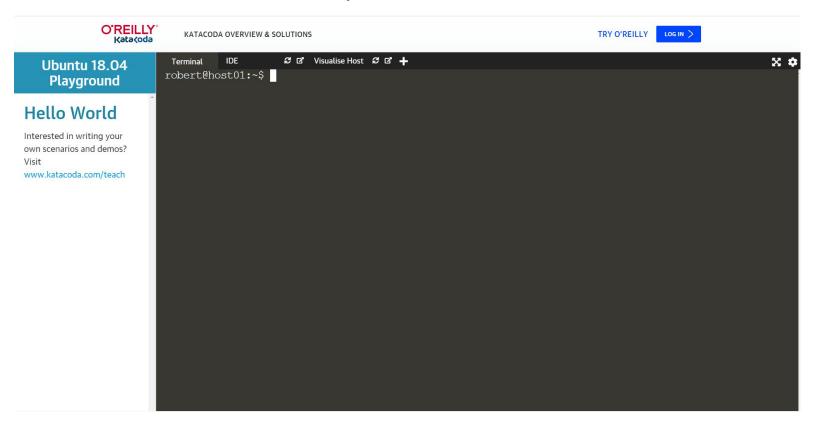








Katacoda





Kahoot!









THANKS!

Any questions?

