

Taller de introducción a GNU/Linux

¿Qué es un sistema operativo?

Un sistema operativo es una capa o interfaz entre el hardware y las aplicaciones o programas que se ejecutan en el



¿Que es un sistema operativo?

Este puede estar formados por muchos modulos, que gestiona los recursos hardware



¿Que GNU/Linux?

GNU (GNU's Not Unix):

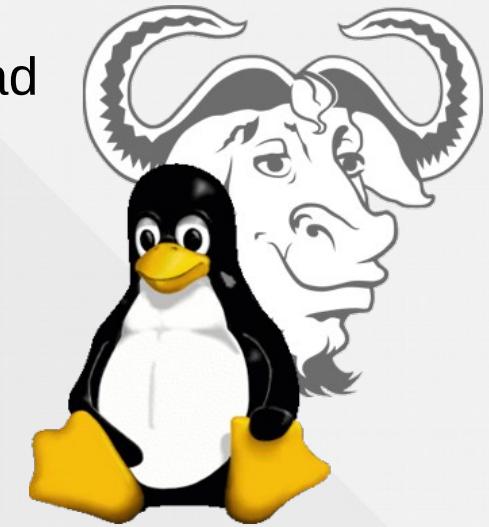
Una colección de software compuesto en su totalidad por software libre.

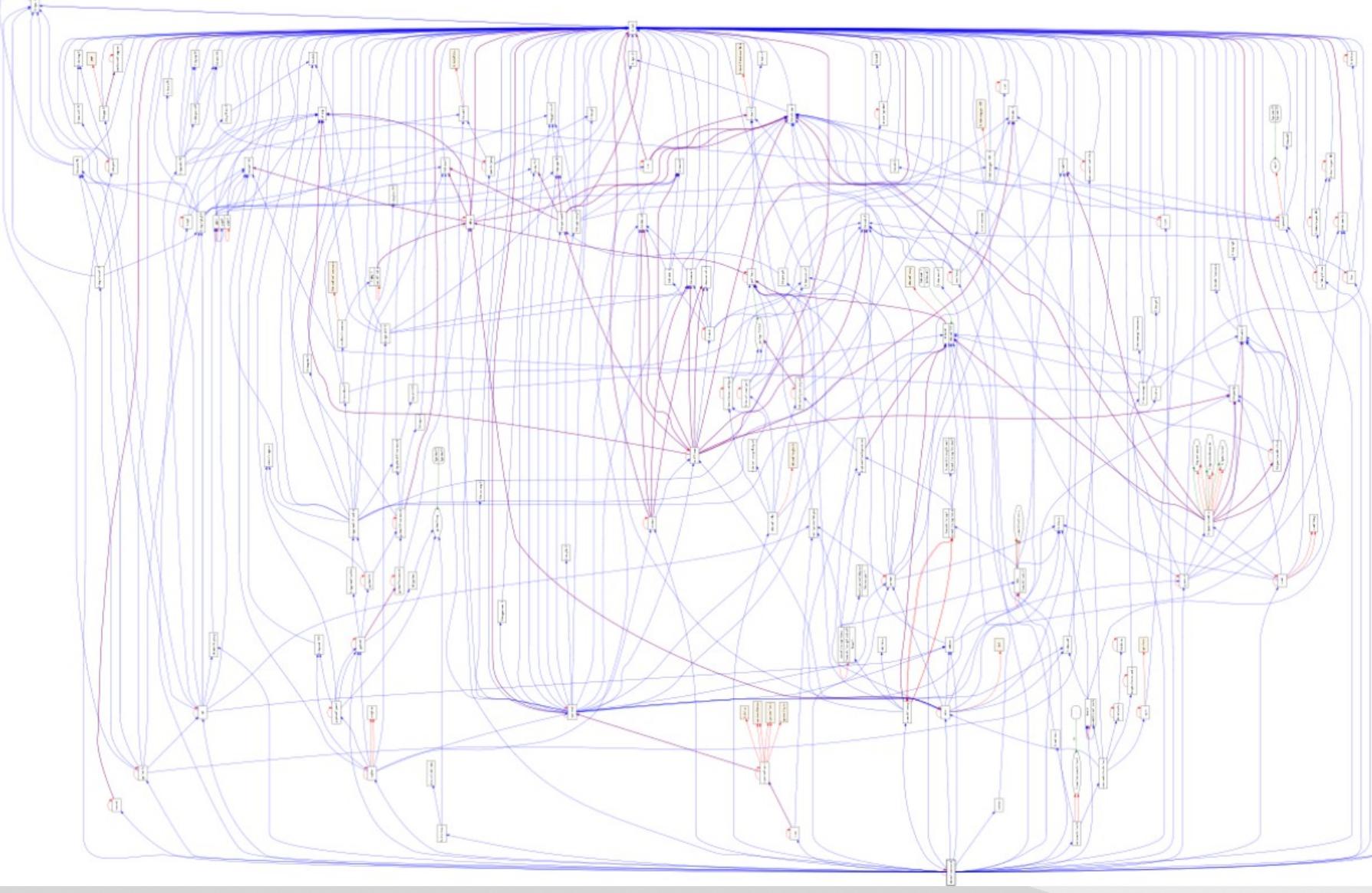
Linux:

Kernel de sistema operativo creado por Linus Trovards.

GNU/Linux:

Unión del kernel de Linux con programas los cuales, normalmente otorgan una serie de interfaces (gráficas o no) al usuario, creando así un sistema operativo completo.





¿Ventajas?

Código abierto!!



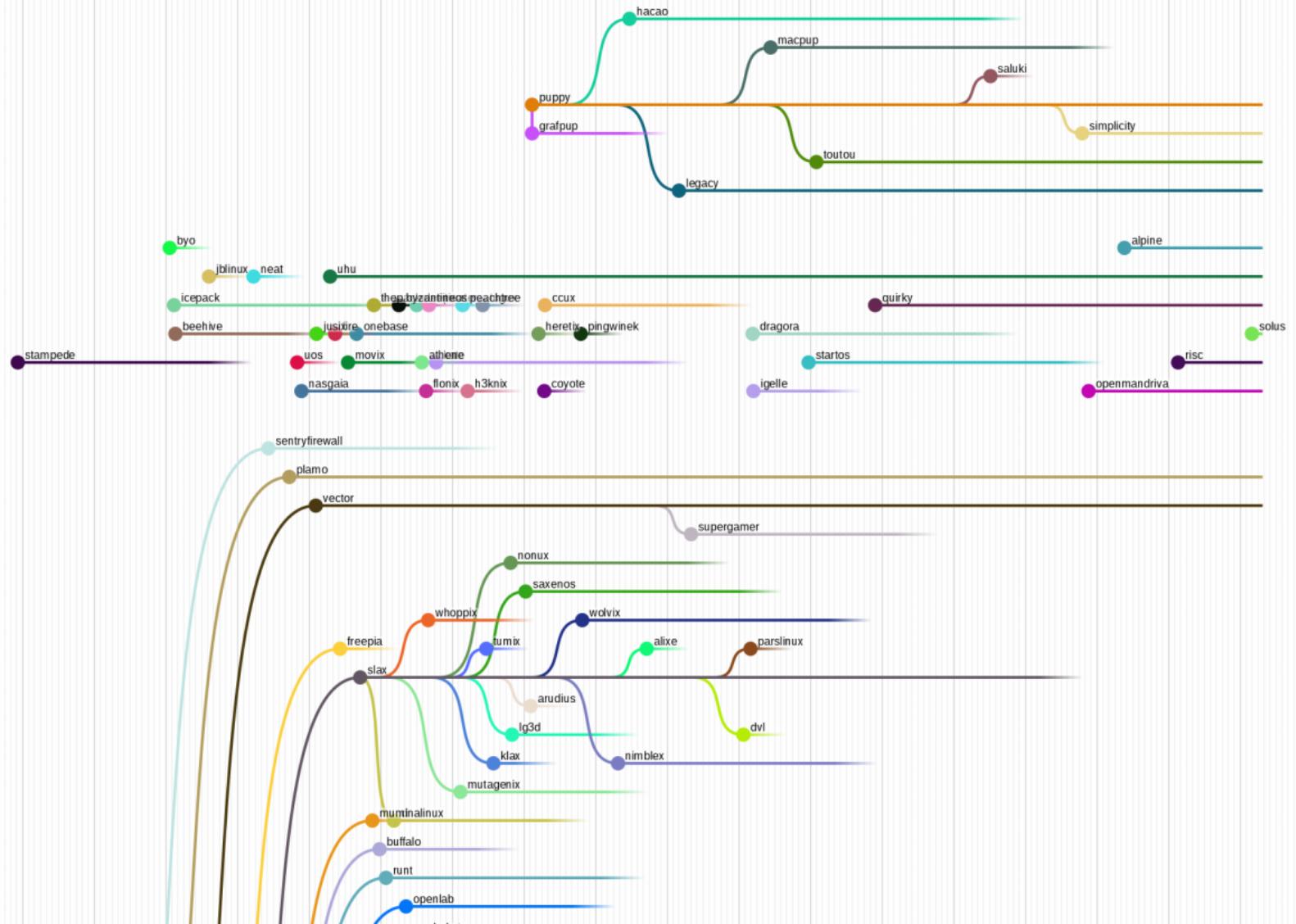
Hay muchas distribuciones ¿cuál elijo?

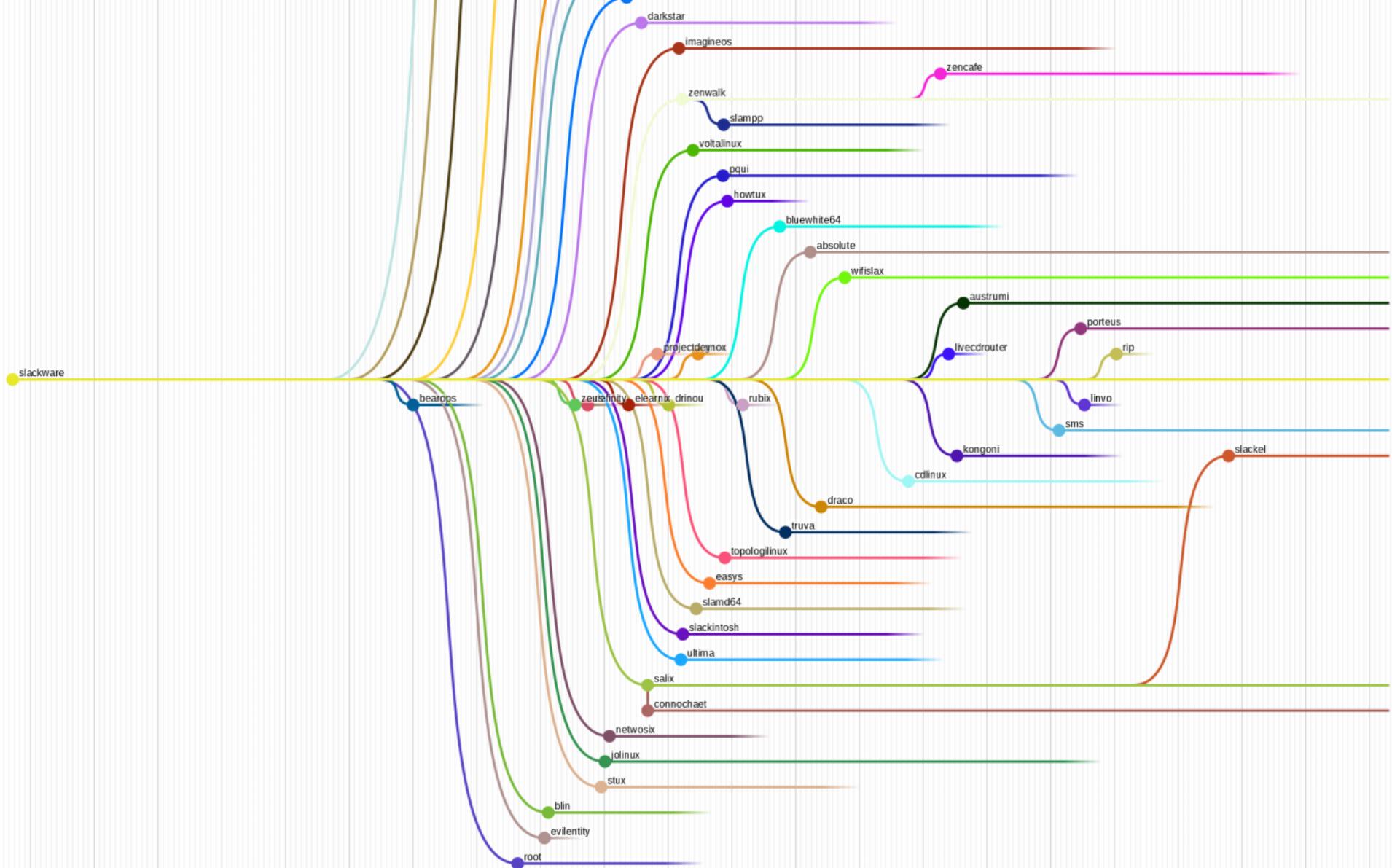
Distro hopping intensifies

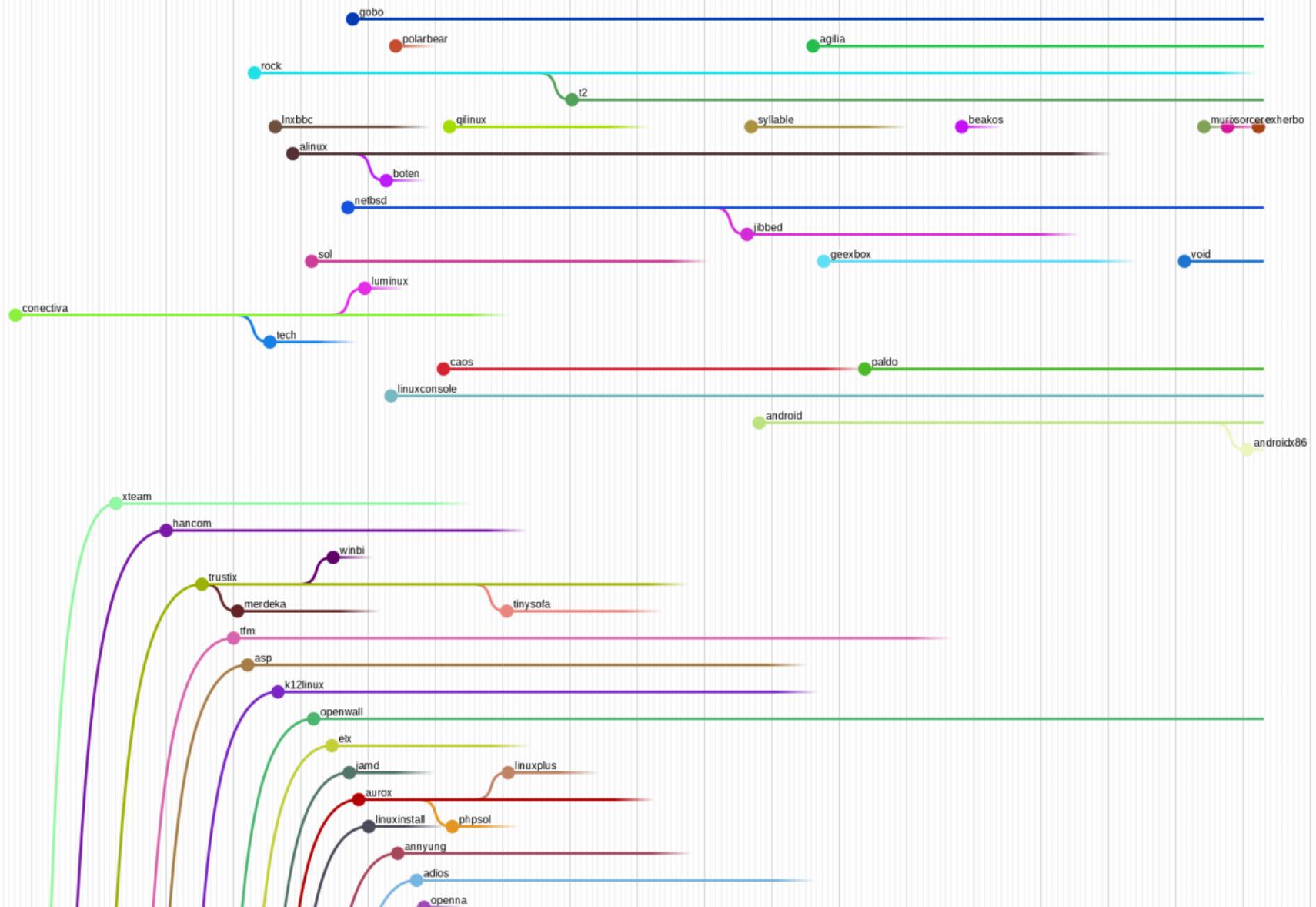


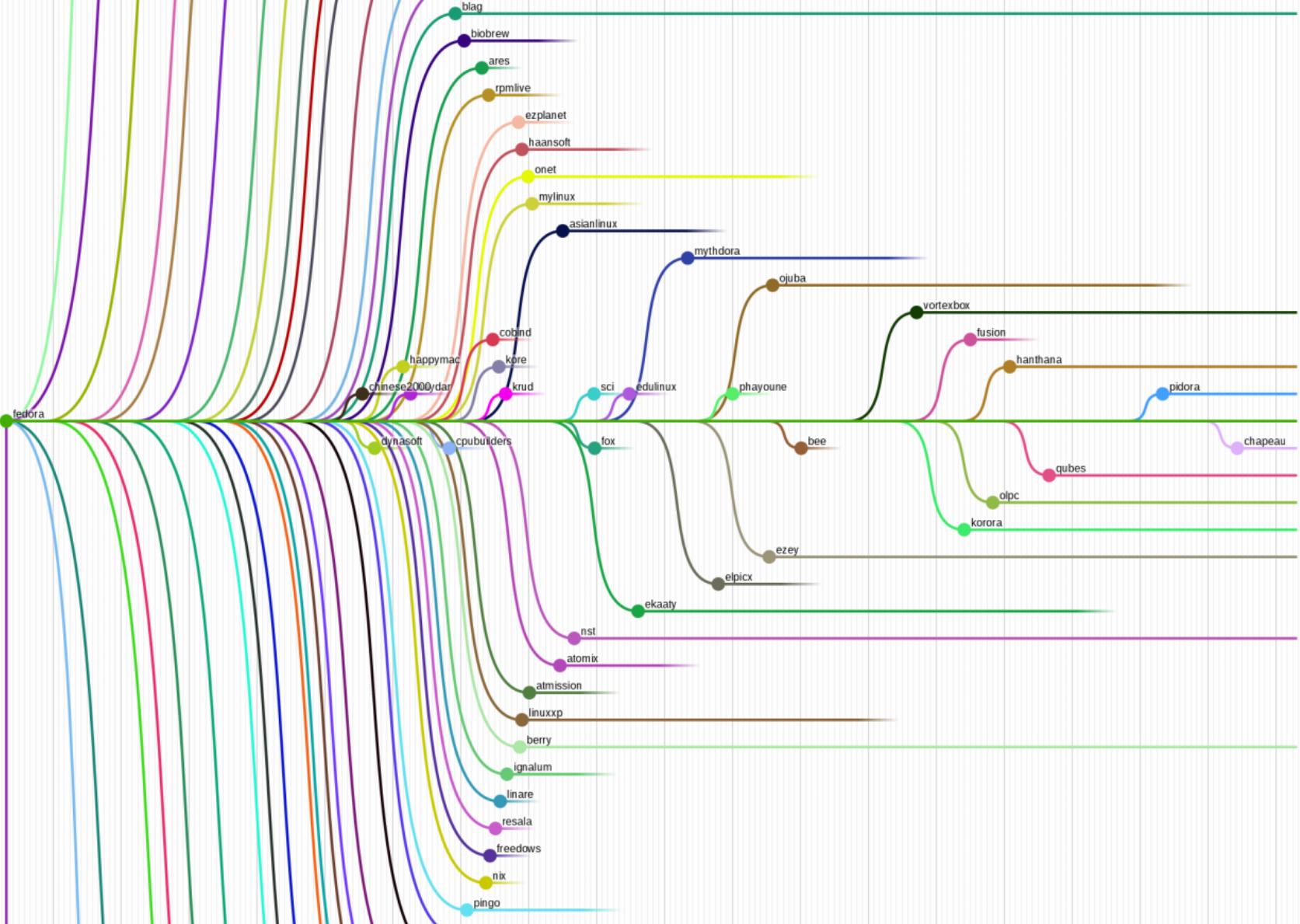
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

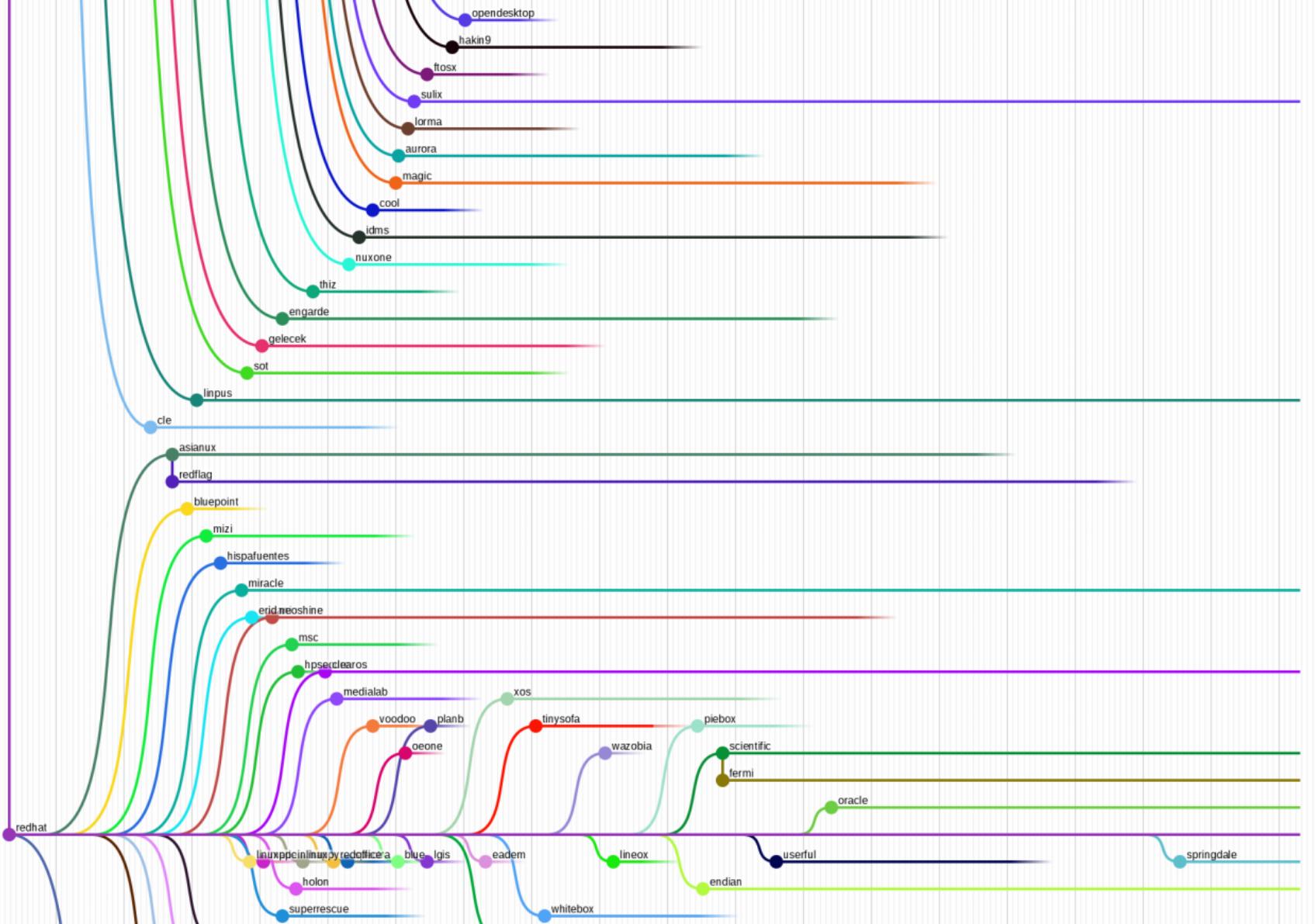
FOSS Landscape
Includes GNU/Linux, BSD's and solaris
Thanks to GNUCLad and Distrowatch
Also <https://github.com/jspeace/distrowatch1graph1swg>

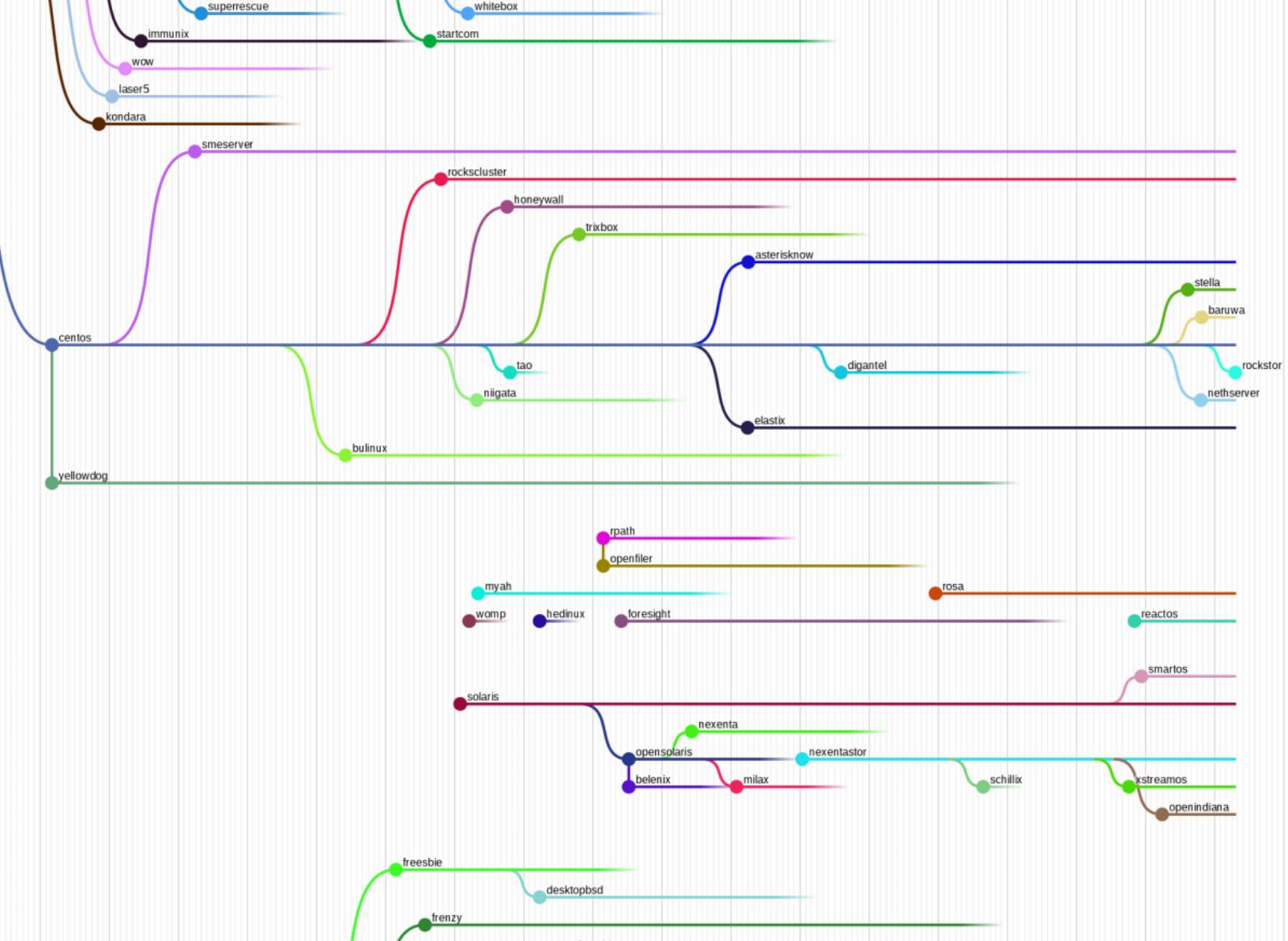


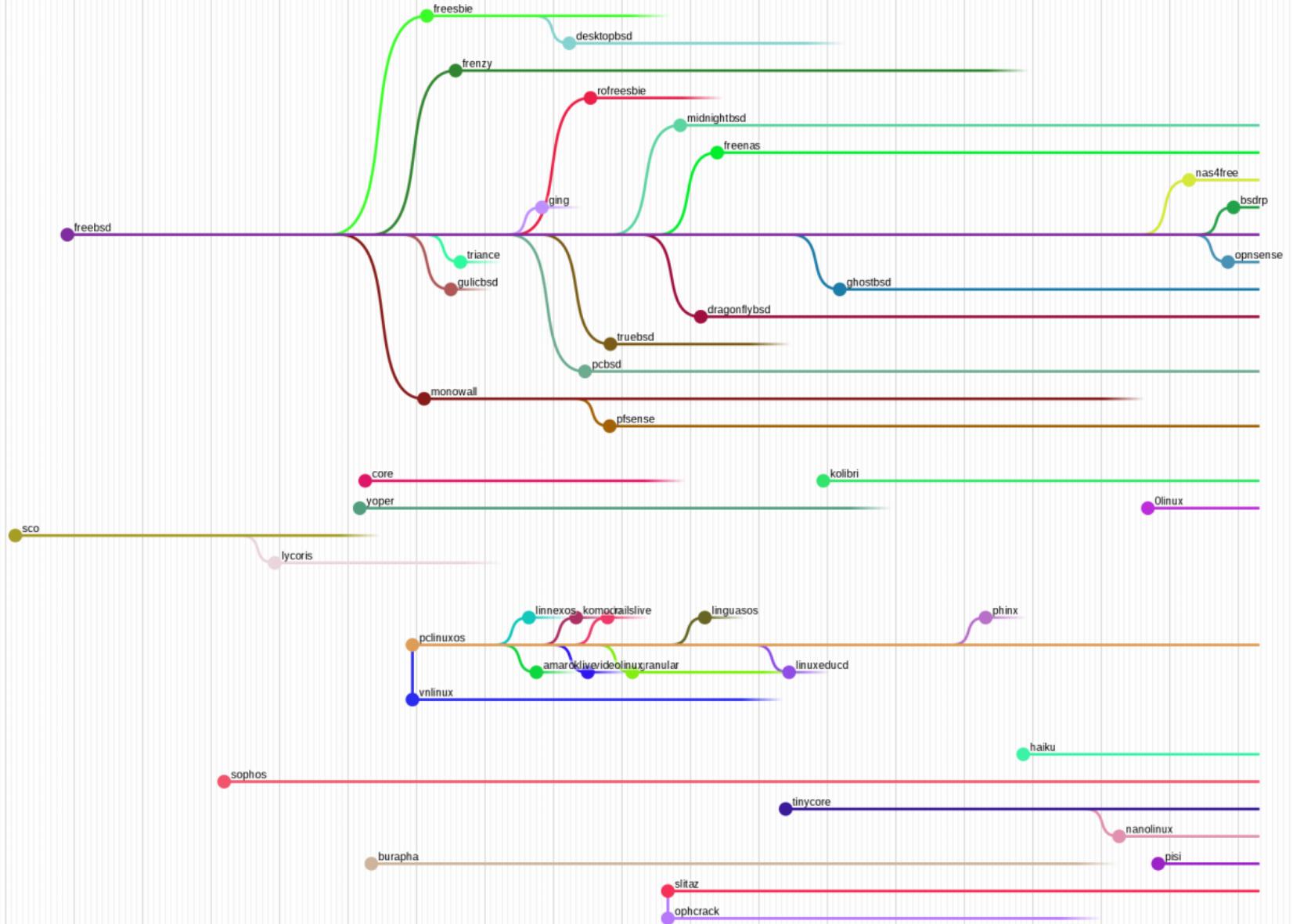


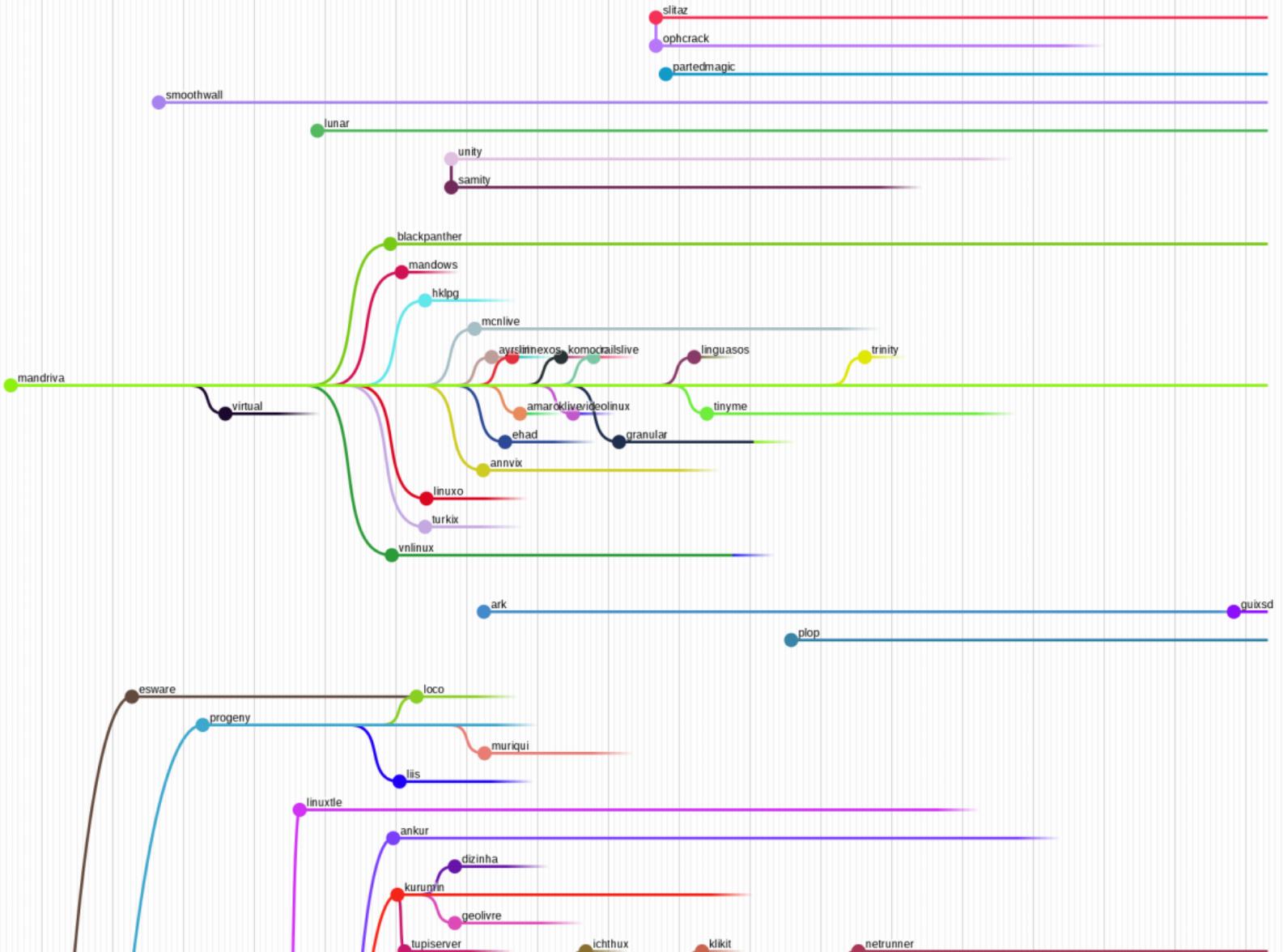


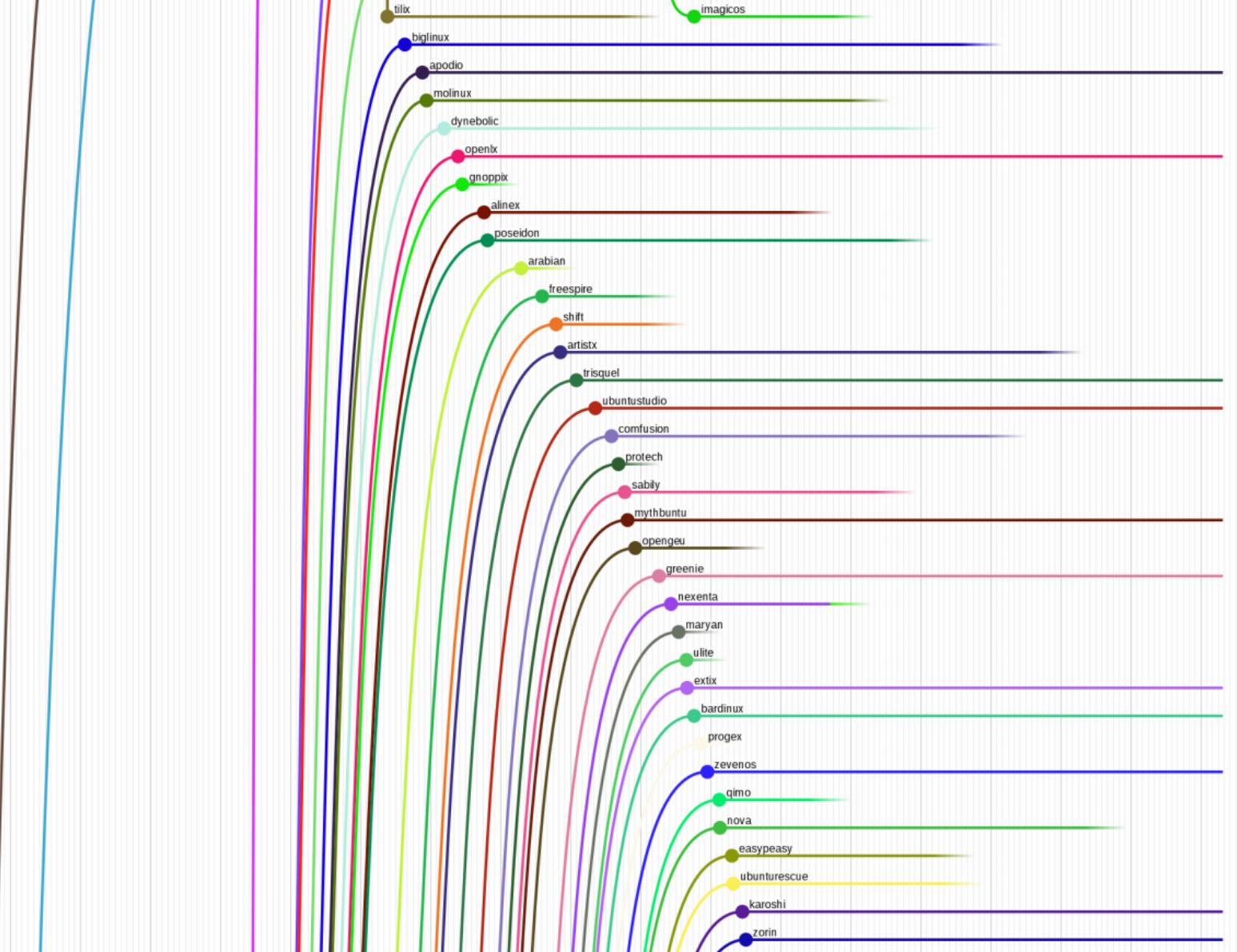


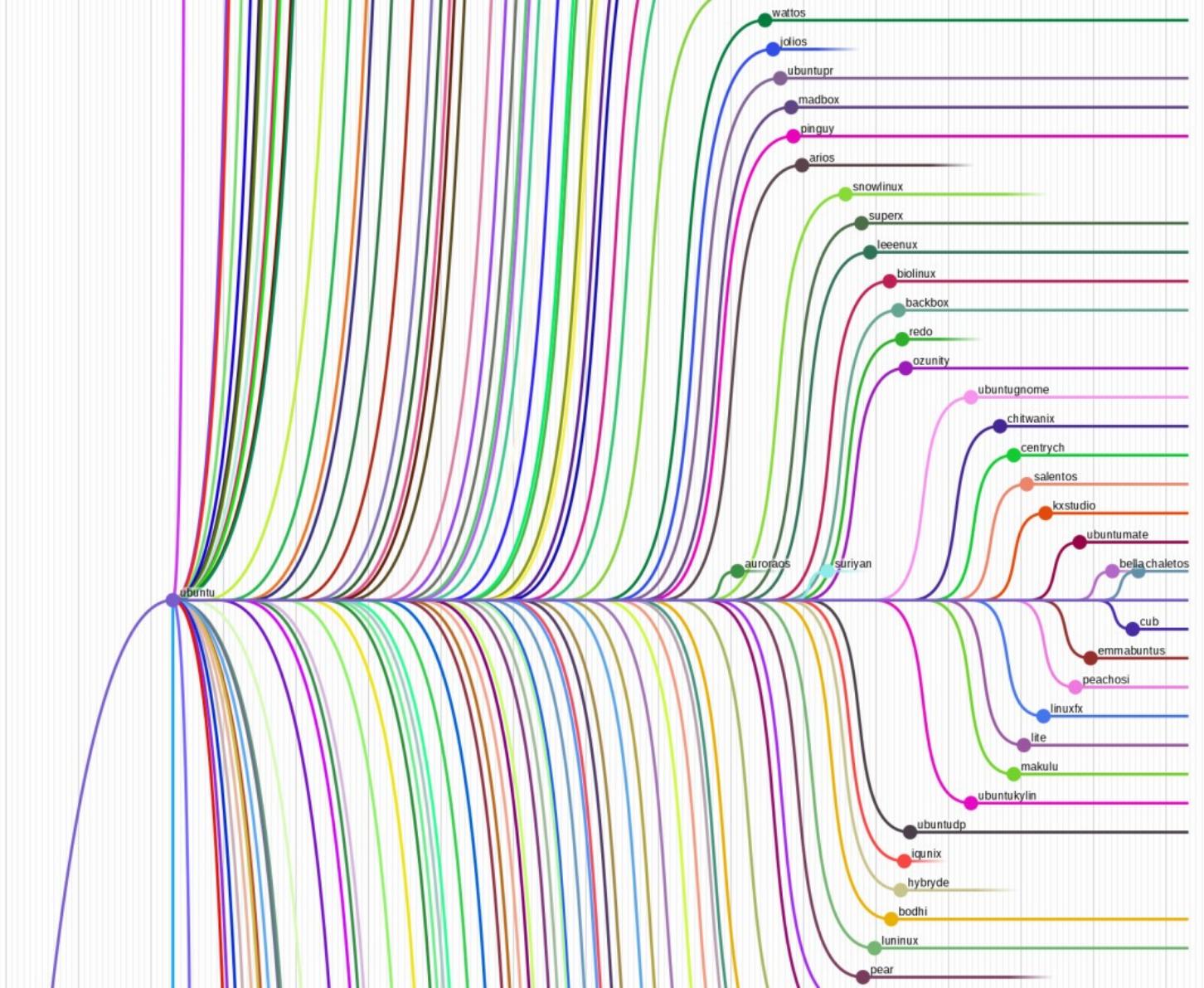


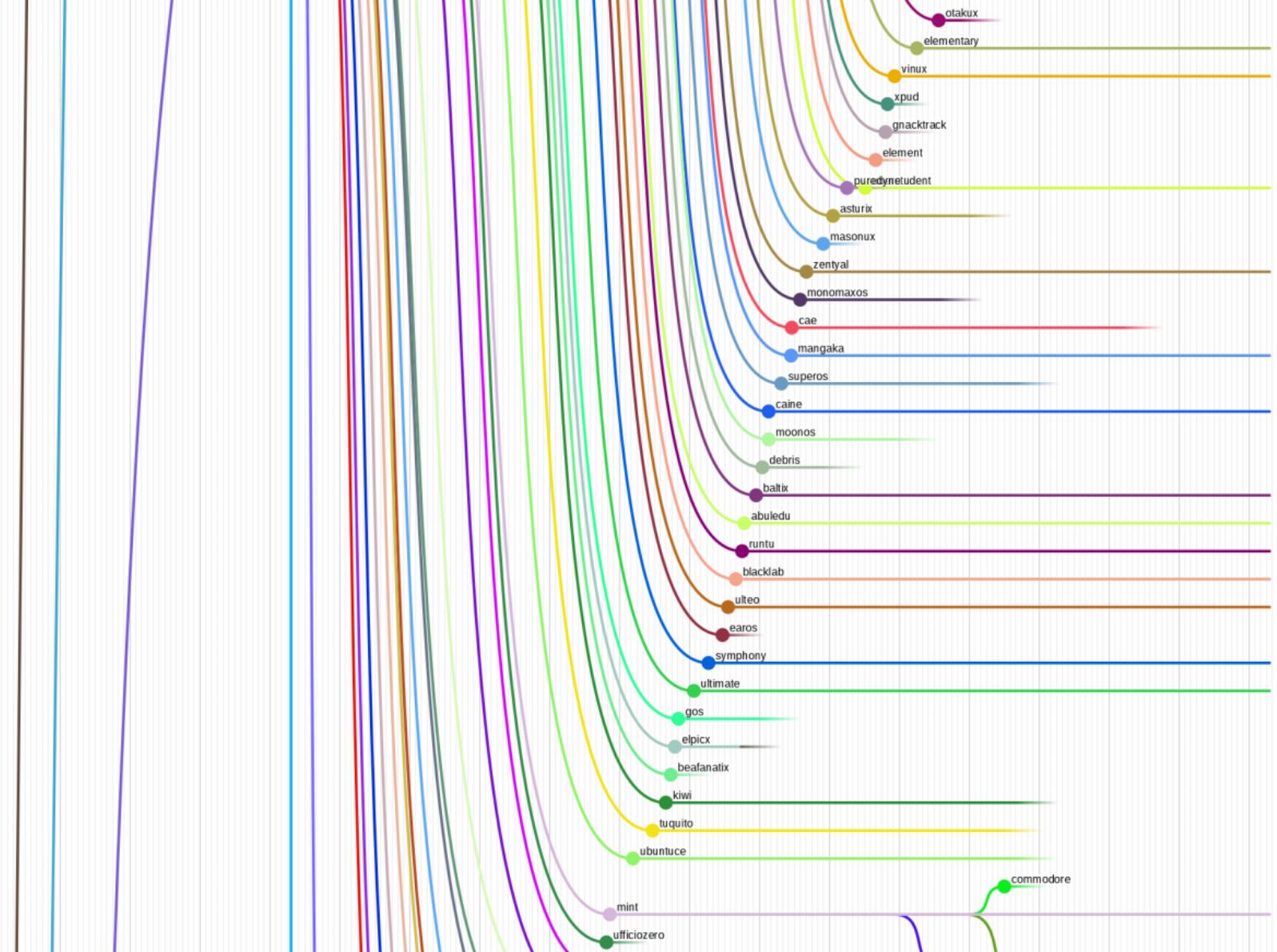


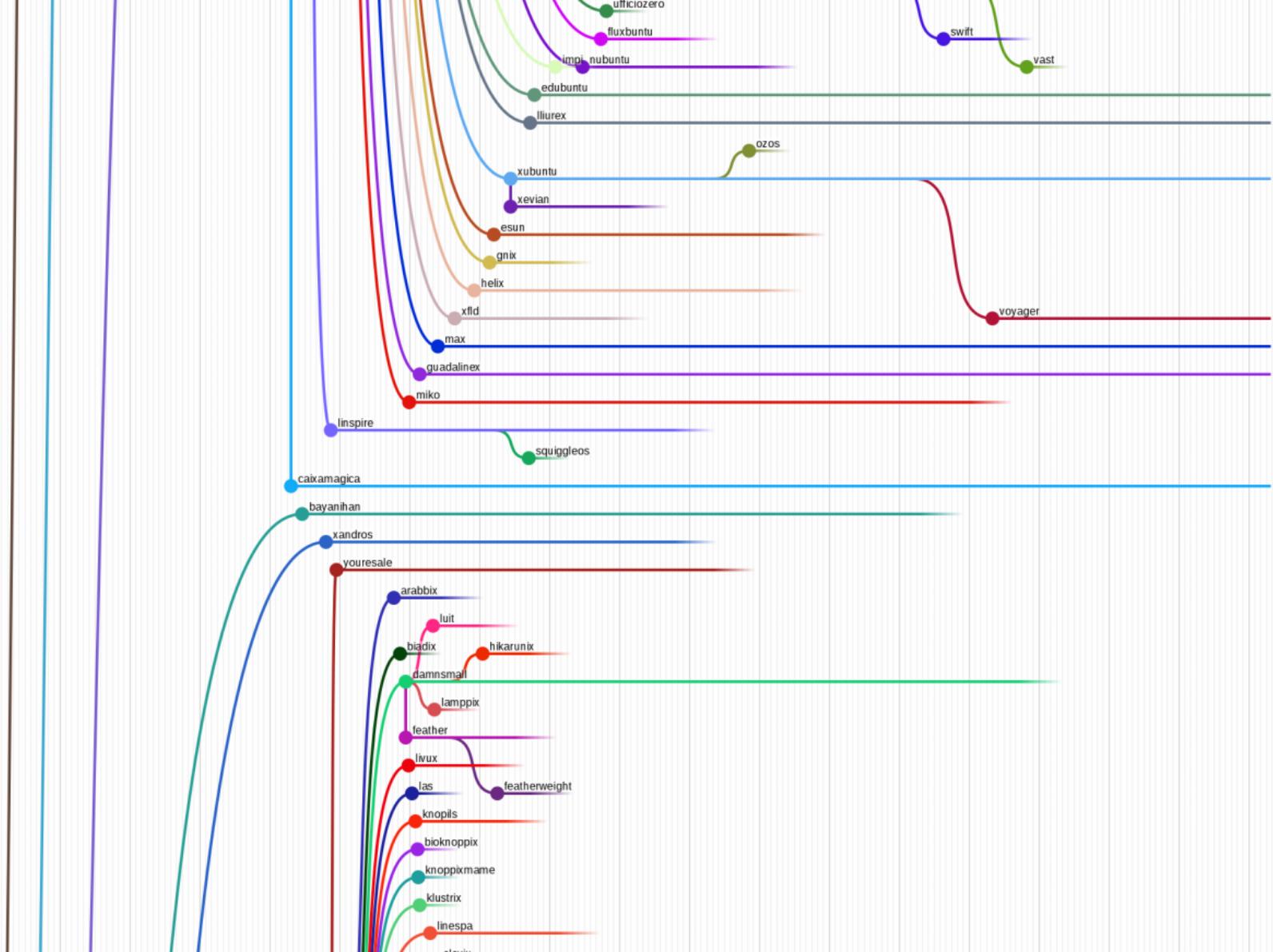


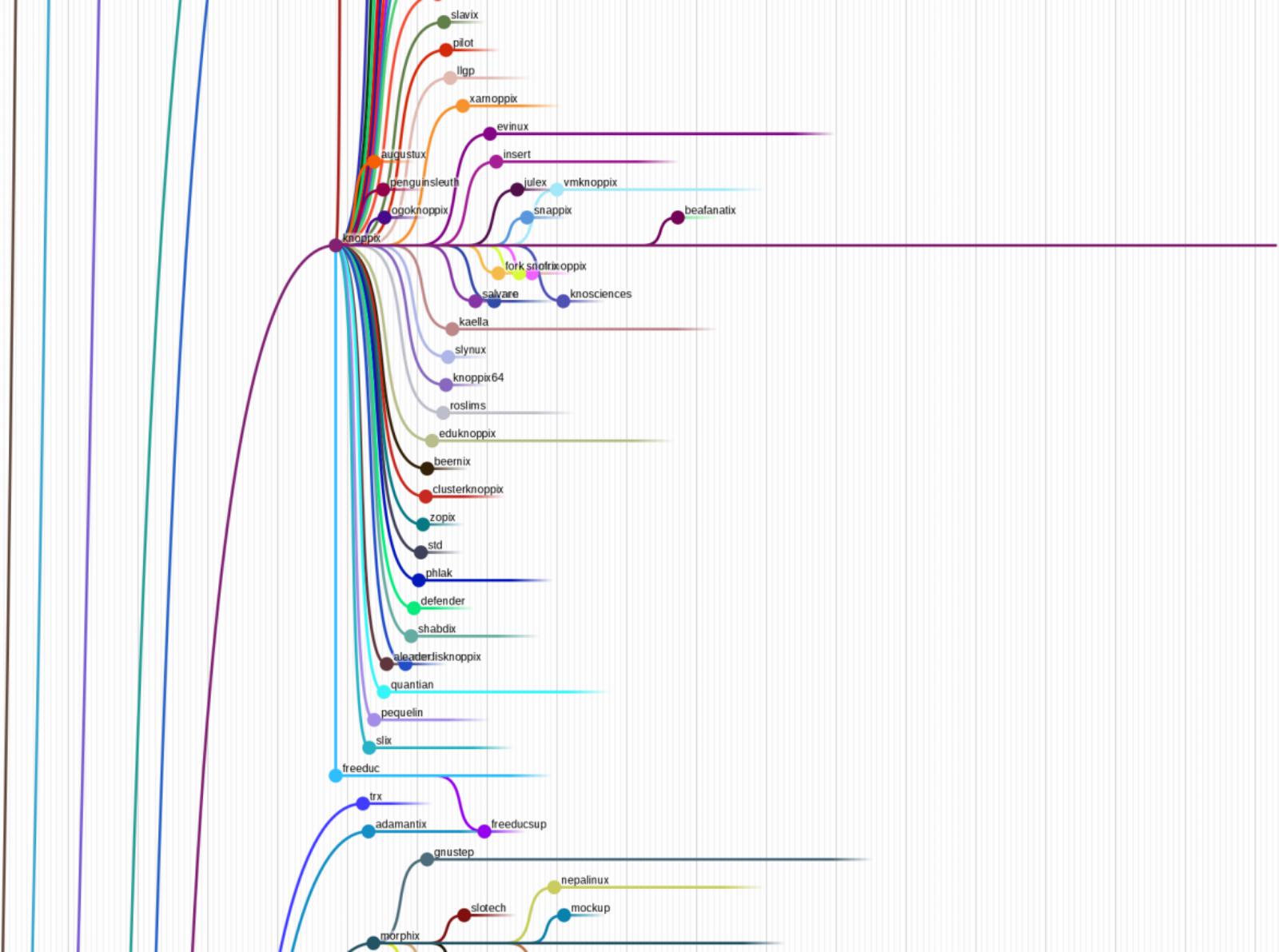


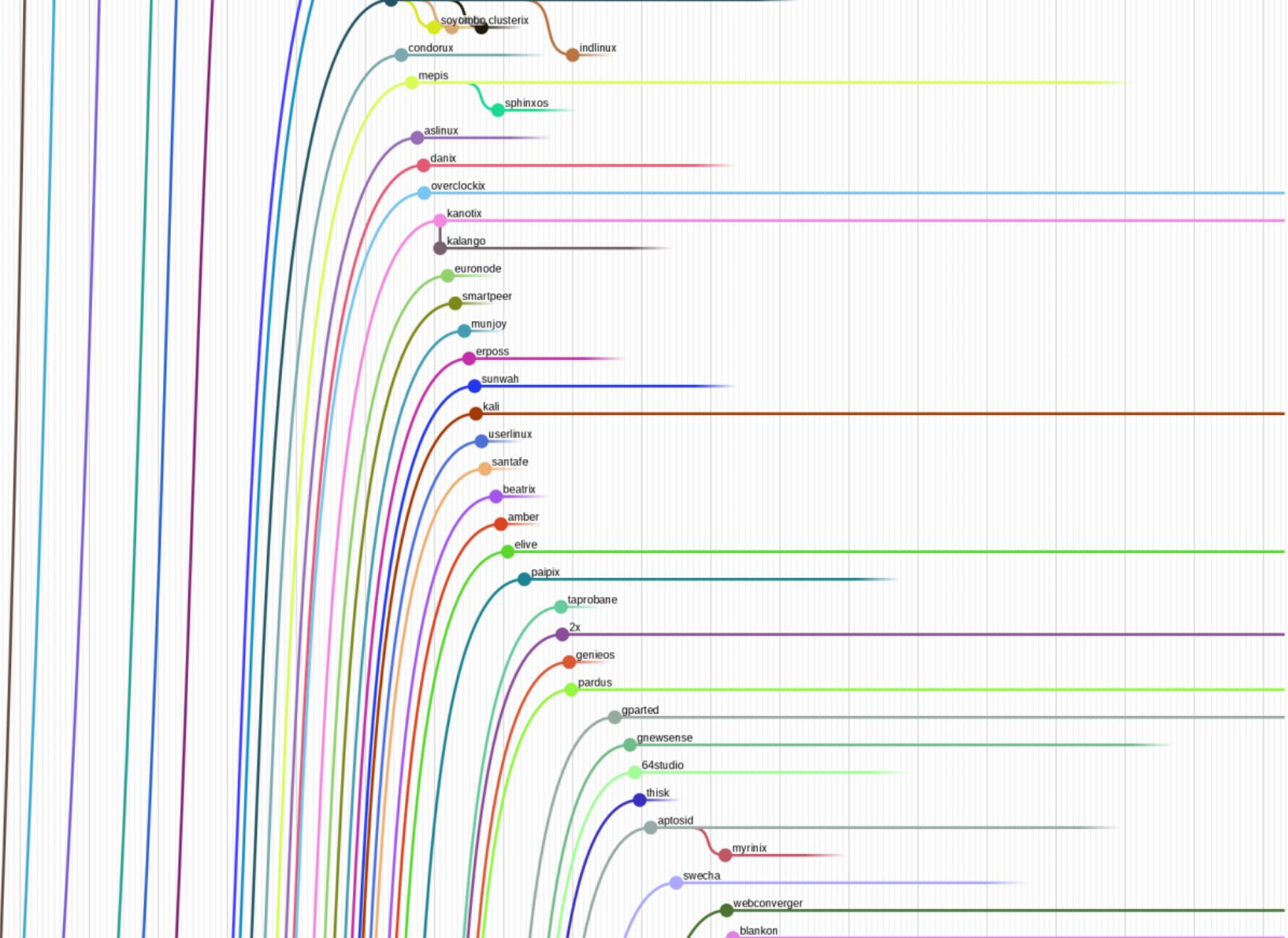


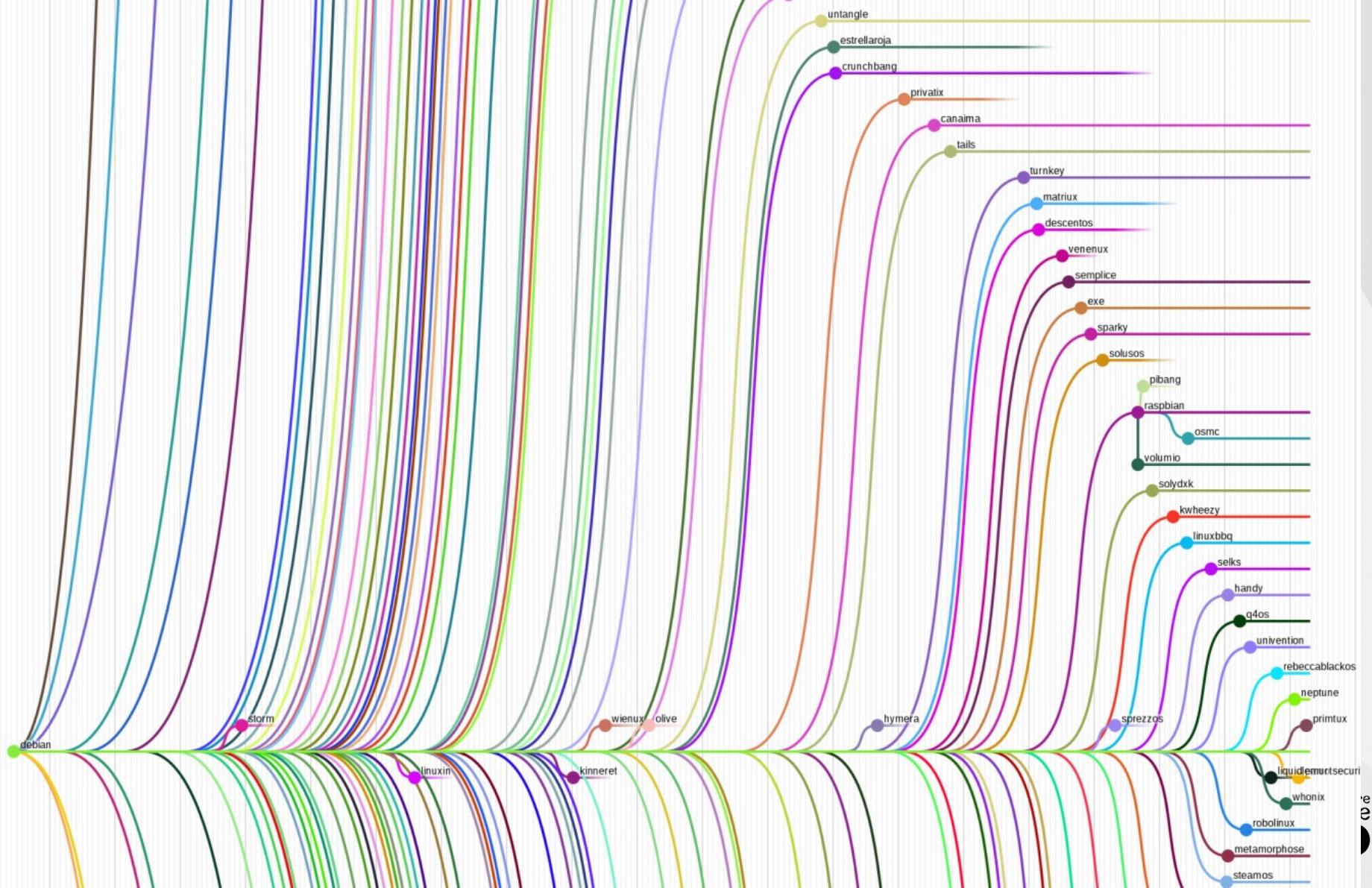


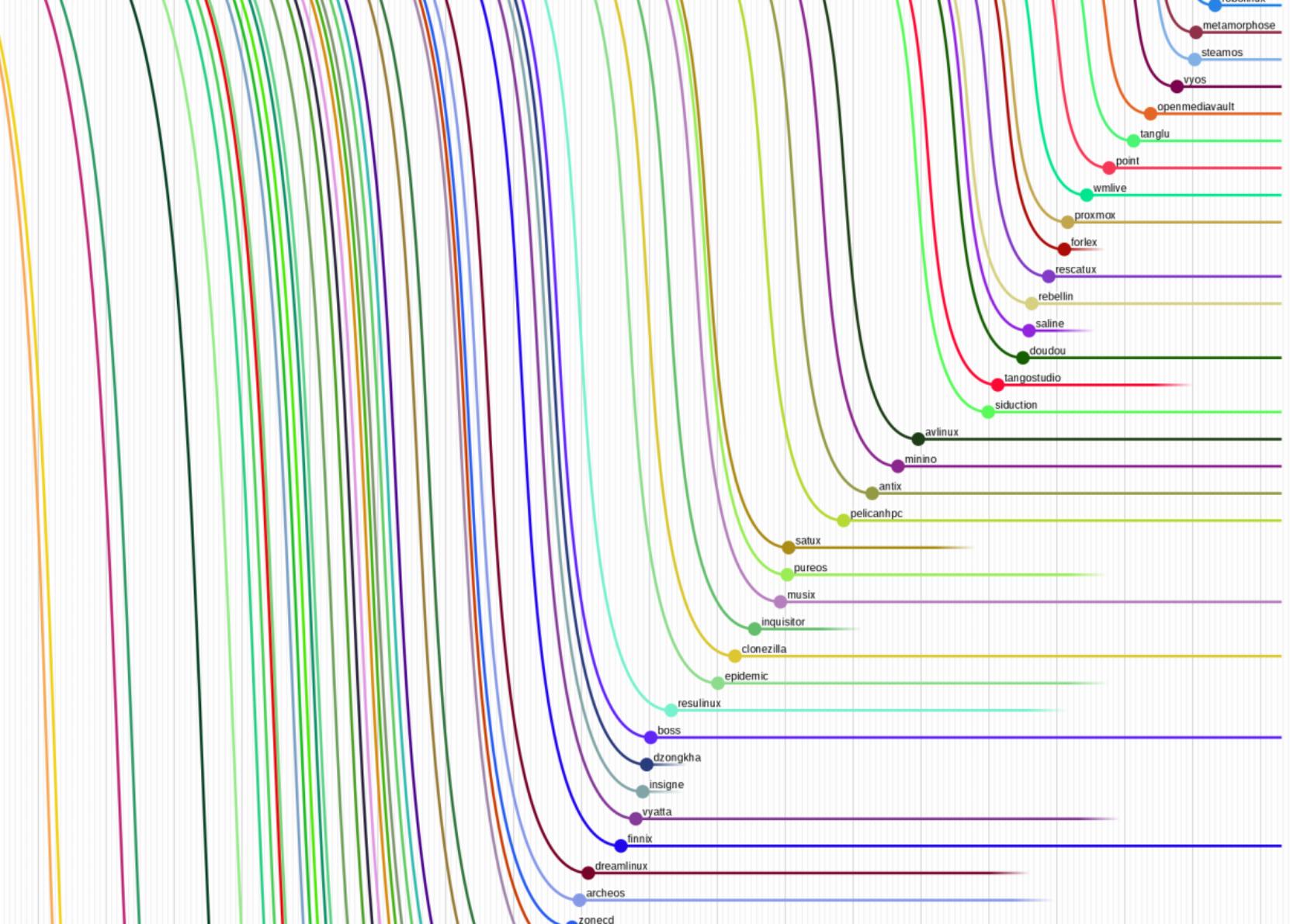


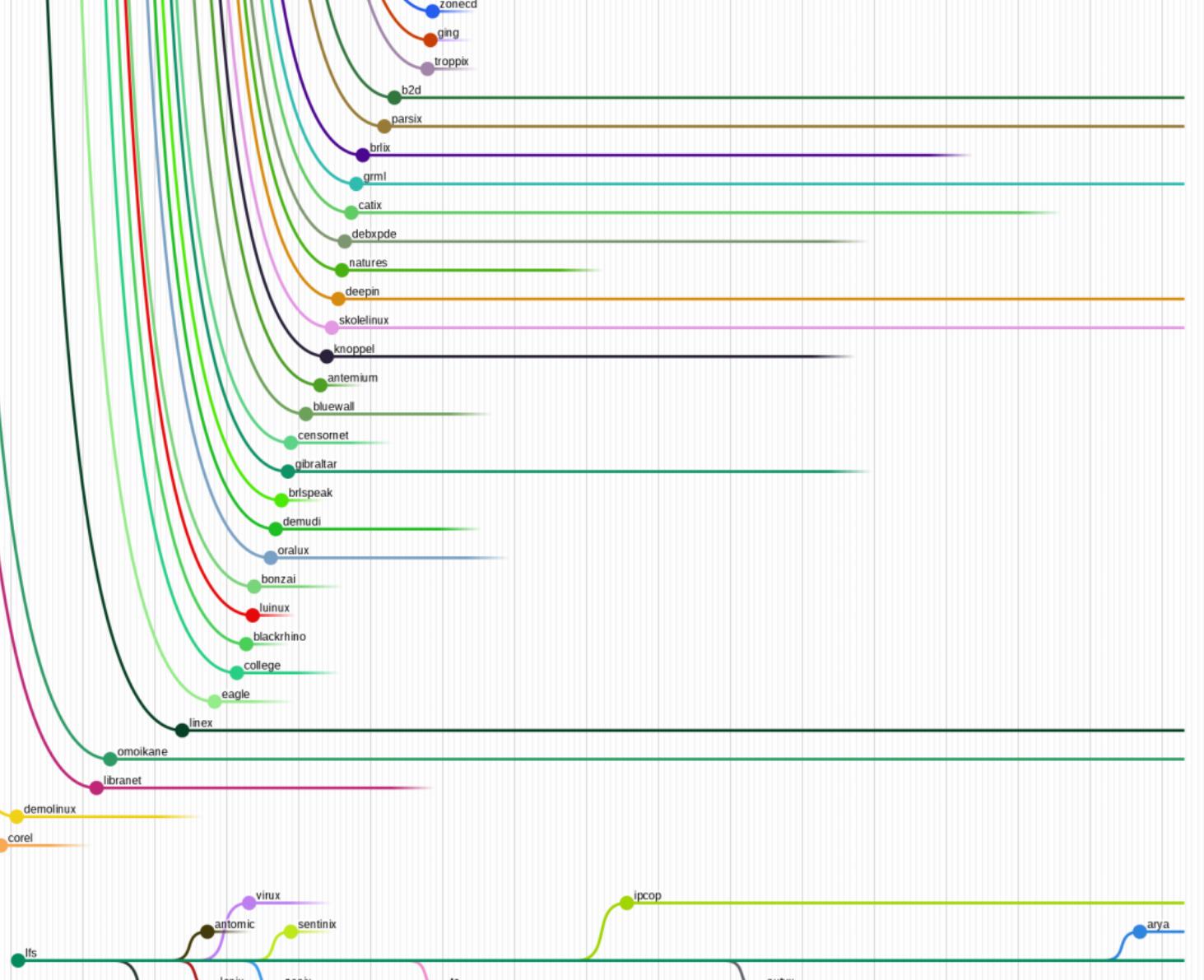


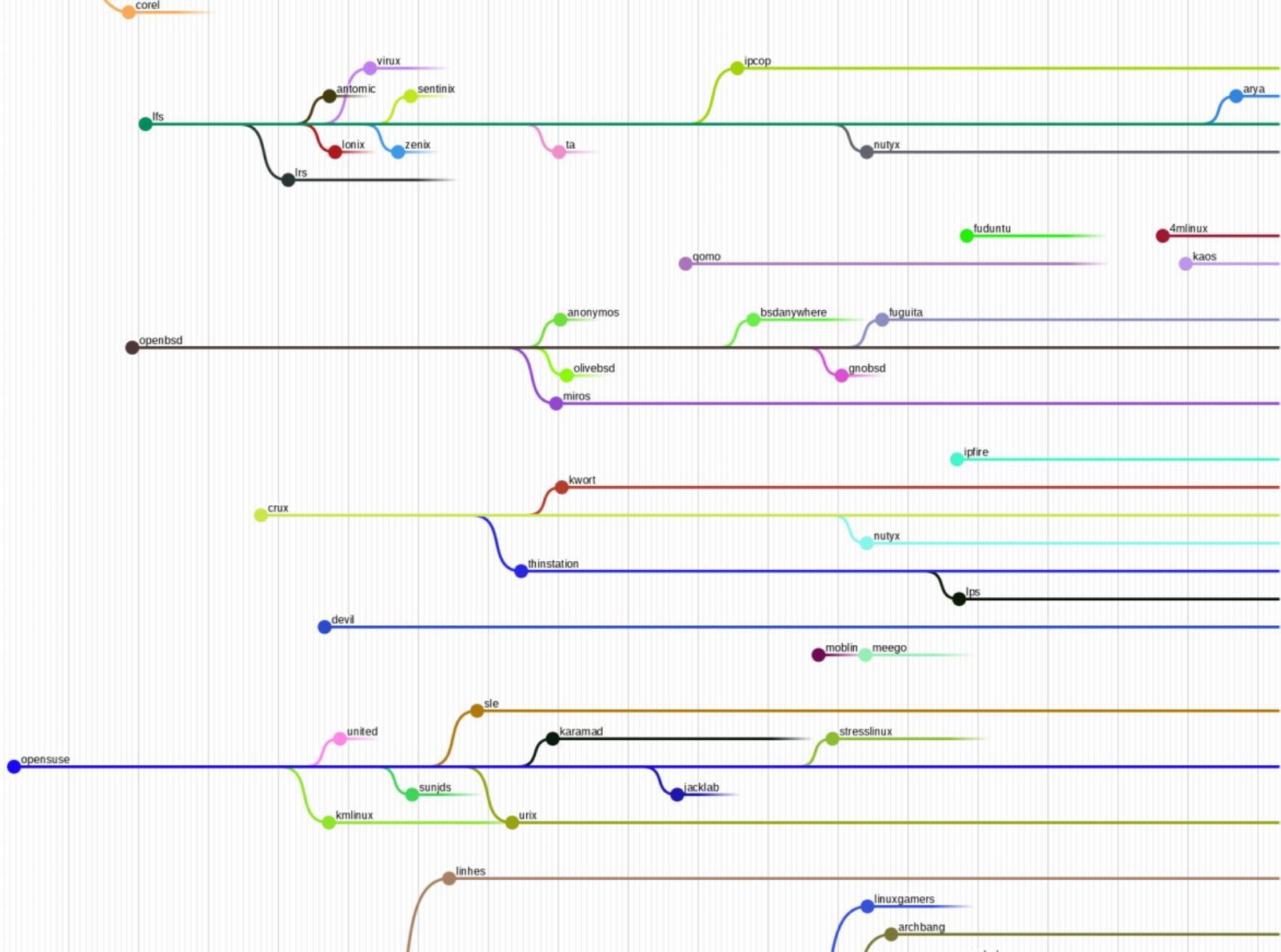


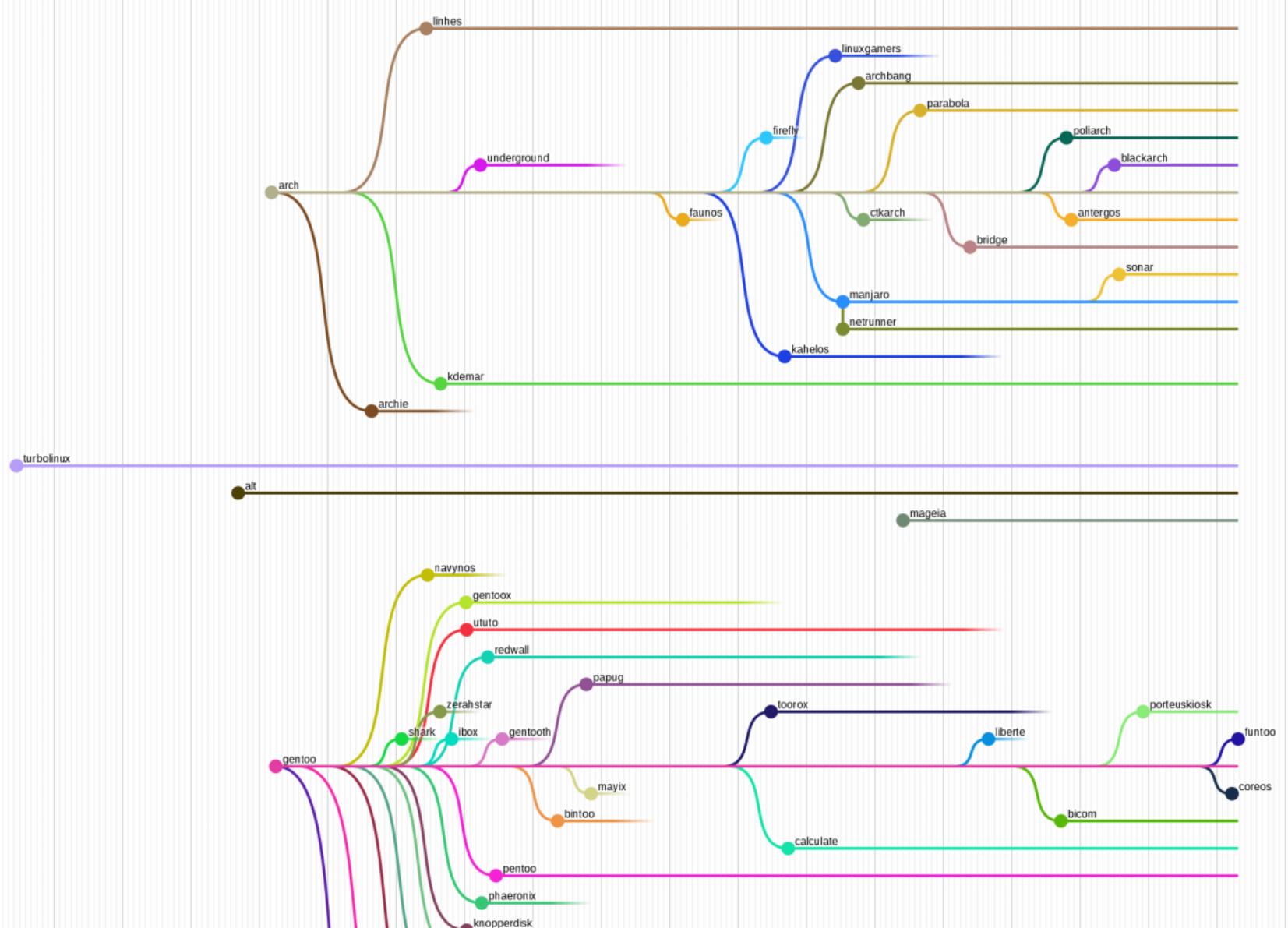


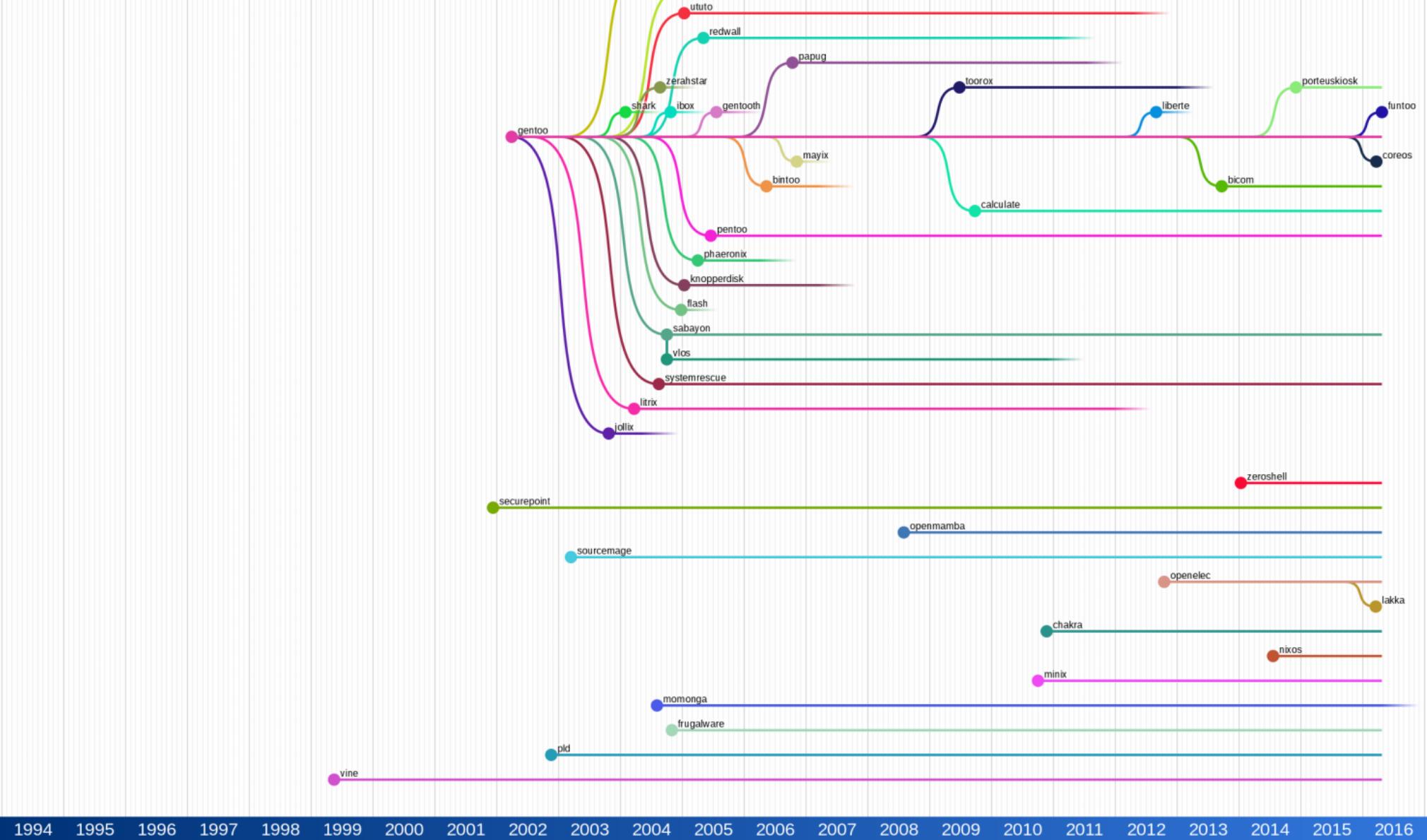












Ubuntu





Bogdan Botezatu
@bbotezatu

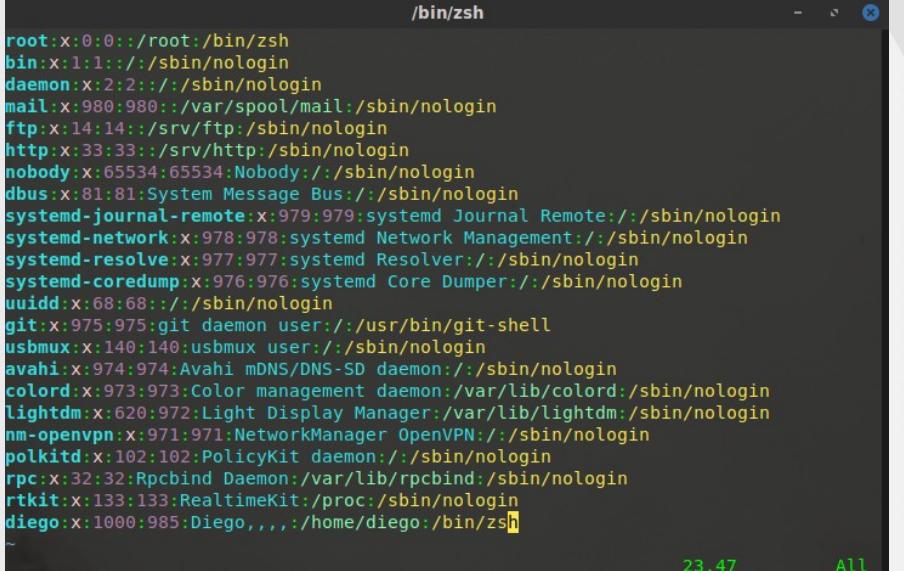


Happy 25th birthday, #Linux! Here's your f-ing #cake, go ahead and compile it yourself.



Mentalidad de linux

Terminal y archivos de configuración

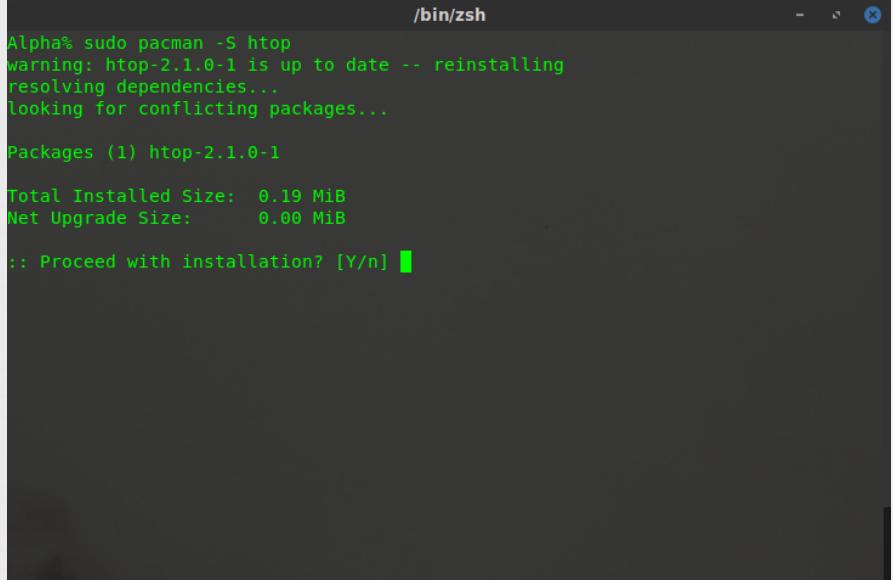


```
/bin/zsh
root:x:0:0::/root:/bin/zsh
bin:x:1:1::/:sbin/nologin
daemon:x:2:2::/:sbin/nologin
mail:x:980:980::/var/spool/mail:/sbin/nologin
ftp:x:14:14::/srv/ftp:/sbin/nologin
http:x:33:33::/srv/http:/sbin/nologin
nobody:x:65534:65534:Nobody::/sbin/nologin
dbus:x:81:81:System Message Bus::/:sbin/nologin
systemd-journal-remote:x:979:979:systemd Journal Remote::/:sbin/nologin
systemd-network:x:978:978:systemd Network Management::/:sbin/nologin
systemd-resolve:x:977:977:systemd Resolver::/:sbin/nologin
systemd-coredump:x:976:976:systemd Core Dumper::/:sbin/nologin
uuidd:x:68:68::/:sbin/nologin
git:x:975:975:git daemon user::/usr/bin/git-shell
usbmux:x:140:140:usbmux user::/:sbin/nologin
avahi:x:974:974:Avahi mDNS/DNS-SD daemon::/:sbin/nologin
colord:x:973:973:Color management daemon:/var/lib/colord:/sbin/nologin
lightdm:x:620:972:Light Display Manager:/var/lib/lightdm:/sbin/nologin
nm-openvpn:x:971:971:NetworkManager OpenVPN::/:sbin/nologin
polkitd:x:102:102:PolicyKit daemon::/:sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
rtkit:x:133:133:RealtimeKit:/proc:/sbin/nologin
diego:x:1000:985:Diego,,,:/home/diego:/bin/zsh
~
```

23,47 All

Mentalidad de linux

Gestor de paqueteria



The screenshot shows a terminal window titled '/bin/zsh' running on an Arch Linux system. The user has run the command `sudo pacman -S htop`. The output shows:

```
Alpha% sudo pacman -S htop
warning: htop-2.1.0-1 is up to date -- reinstalling
resolving dependencies...
looking for conflicting packages...

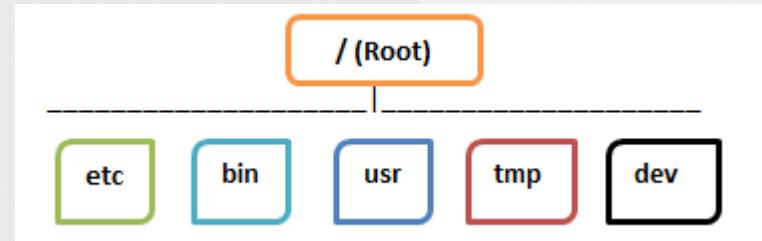
Packages (1) htop-2.1.0-1

Total Installed Size: 0.19 MiB
Net Upgrade Size: 0.00 MiB

:: Proceed with installation? [Y/n] █
```

Mentalidad de linux

Directories
File system



RAIZ



```
graph TD; /["/"] --- bin[/bin/]; / --- boot[/boot/]; / --- dev[/dev/]; / --- etc[/etc/]; / --- home[/home/]; / --- lib[/lib/]; / --- media[/media/]; / --- mnt[/mnt/]
```

/bin/

Comandos Binarios Esenciales Para Los Usuarios Del Sistema por ejemplo: cp,rm,ls,pwd,mv

/boot/

Diretorio que contienen los ficheros de configuracion de arranque del sistema por ejemplo: initr, vmlinuz

/dev/

Directorio que contiene las configuraciones de los perifericos del sistema, ejemplo (Disco Duro, Floppy, Memorias USB,Reproductores de Audio)

/etc/

Directorio que contiene los ficheros de configuracion del sistema en general

/home/

Contiene los directorios de los usuarios, excepto del superusuario administrador (root); contiene archivos guardados, ajustes personales, etc.

/lib/

Diretorio que alberga las bibliotecas esenciales compartidas de los programas alojados

/media/

Contiene los puntos de montaje de los dispositivos removibles de almacenamiento, como lectores de CD-ROM ó memoria USB

/mnt/

Sistema de archivos montados temporalment. Sirve para montar discos duros y particiones de forma temporal en el sistema.

Mentalidad de linux

Procesos Usuarios

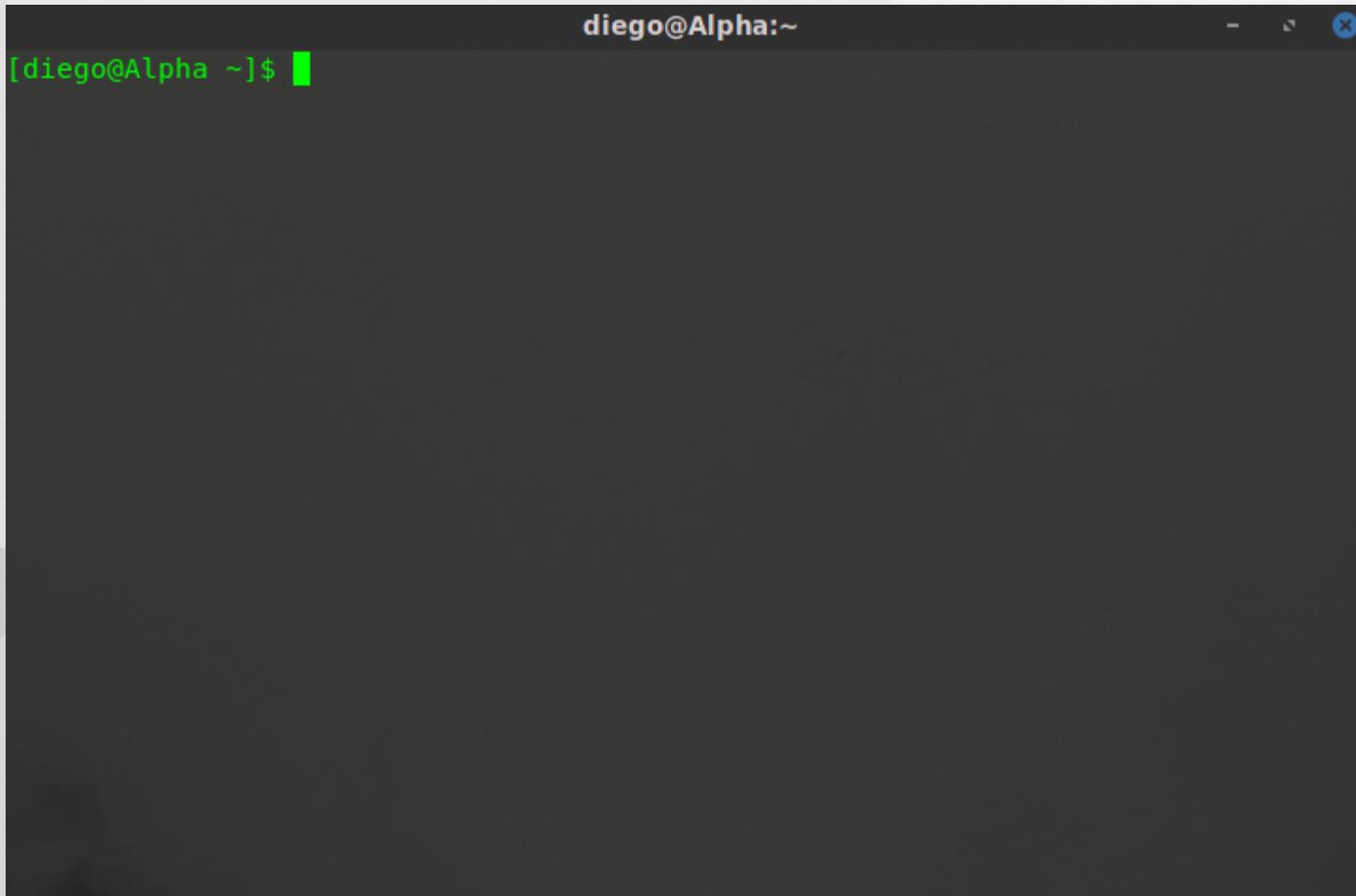
```
1 [|||||] 13.8% 5 [|||||] 12.5%
2 [|||||] 45.8% 6 [||] 0.7%
3 [|||] 9.3% 7 [|||||] 7.3%
4 [|||] 5.2% 8 [||] 2.6%
Mem[|||||] 3,346/9,656 Tasks: 93, 507 thr; 3 running
Swp[ 0K/9,546] Load average: 0.67 0.63 0.59
Uptime: 11:58:47

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
1 root 20 0 236M 8740 6660 S 0.0 0.1 0:00.76 /sbin/init
14754 diego 20 0 684M 57676 34124 S 2.0 0.6 0:00.86
14763 diego 20 0 33168 5480 3688 S 0.0 0.1 0:00.23
14768 diego 20 0 22452 5456 3629 R 0.7 0.1 0:00.32
14758 diego 20 0 684M 57676 34124 S 0.0 0.6 0:00.06
14756 diego 20 0 684M 57676 34124 S 0.0 0.6 0:00.08
14755 diego 20 0 684M 57676 34124 S 0.0 0.6 0:00.00
14161 diego 20 0 195M 5776 4700 S 0.0 0.1 0:00.01
14179 diego 20 0 1792M 439M 129M S 0.0 4.5 0:56.94
14185 diego 20 0 1792M 439M 129M S 0.0 4.5 0:56.00
14184 diego 20 0 1792M 439M 129M S 0.0 4.5 0:00.00
14183 diego 20 0 1792M 439M 129M S 0.0 4.5 0:00.00
14181 diego 20 0 1792M 439M 129M S 0.0 4.5 0:00.00
14178 diego 20 0 195M 5776 4700 S 0.0 0.1 0:00.00
14174 diego 20 0 195M 5776 4700 S 0.0 0.1 0:00.00
903 diego 20 0 486M 12452 10684 S 0.0 0.1 0:00.02
917 diego 20 0 486M 12452 10684 S 0.0 0.1 0:00.00
916 diego 20 0 486M 12452 10684 S 0.0 0.1 0:00.00
890 colord 20 0 302M 13600 8596 S 0.0 0.1 0:00.22
899 colord 20 0 302M 13600 8596 S 0.0 0.1 0:00.02
897 colord 20 0 302M 13600 8596 S 0.0 0.1 0:00.00
888 root 20 0 302M 8636 7072 S 0.0 0.1 0:00.49
896 root 20 0 302M 8636 7072 S 0.0 0.1 0:00.02
895 root 20 0 302M 8636 7072 S 0.0 0.1 0:00.00
827 rtkit 21 1 170M 2536 2304 S 0.0 0.0 0:00.19
829 rtkit RT 1 170M 2536 2304 S 0.0 0.0 0:00.07
828 rtkit 20 0 170M 2536 2304 S 0.0 0.0 0:00.11
816 root 20 0 491M 11412 8368 S 0.0 0.1 0:03.72
854 root 20 0 491M 11412 8368 S 0.0 0.1 0:00.00
829 root 20 0 491M 11412 8368 S 0.0 0.1 0:00.00
819 root 20 0 491M 11412 8368 S 0.0 0.1 0:00.22
817 root 20 0 491M 11412 8368 S 0.0 0.1 0:00.00
689 diego 20 0 271M 7196 6176 S 0.0 0.1 0:00.10
736 diego 20 0 271M 7196 6176 S 0.0 0.1 0:00.00
691 diego 20 0 271M 7196 6176 S 0.0 0.1 0:00.06
690 diego 20 0 271M 7196 6176 S 0.0 0.1 0:00.00
677 diego 20 0 76876 7906 6532 S 0.0 0.1 0:00.04

13.8% 5 [|||||] 12.5%
45.8% 6 [||] 0.7%
9.3% 7 [|||||] 7.3%
5.2% 8 [||] 2.6%
Mem[|||||] 3,346/9,656 Tasks: 93, 507 thr; 3 running
Swp[ 0K/9,546] Load average: 0.67 0.63 0.59
Uptime: 11:58:47

/usr/bin/python2 /usr/bin/terminator
└── /bin/zsh
    └── htop
        ├── /usr/bin/python2 /usr/bin/terminator
        ├── /usr/bin/python2 /usr/bin/terminator
        └── /usr/bin/python2 /usr/bin/terminator
/usr/lib/libreoffice/program/oosplash --impress file:///home/diego/Documents/charla.odp
/usr/lib/libreoffice/program/soffice.bin --impress file:///home/diego/Documents/charla.odp --splash-pipe
└── /usr/lib/libreoffice/program/soffice.bin --impress file:///home/diego/Documents/charla.odp --splash-pipe
    ├── /usr/lib/libreoffice/program/soffice.bin --impress file:///home/diego/Documents/charla.odp --splash-pipe
    └── /usr/lib/libreoffice/program/oosplash --impress file:///home/diego/Documents/charla.odp
/usr/lib/libreoffice/program/oosplash --impress file:///home/diego/Documents/charla.odp
/usr/lib/libreoffice/program/soffice.bin --impress file:///home/diego/Documents/charla.odp
/usr/lib/cinnamon-settings-daemon/csd-printer
└── /usr/lib/cinnamon-settings-daemon/csd-printer
    ├── /usr/lib/color
    │   ├── /usr/lib/color
    │   └── /usr/lib/color
    └── /usr/lib/upower/upower
        ├── /usr/lib/upower/upowerd
        ├── /usr/lib/upower/upowerd
        └── /usr/lib/upower/upowerd
/usr/lib/rtkit-daemon
└── /usr/lib/rtkit-daemon
    ├── /usr/lib/rtkit-daemon
    └── /usr/lib/rtkit-daemon
/usr/lib/udisks2/udisksd
└── /usr/lib/udisks2/udisksd
    ├── /usr/lib/udisks2/udisksd
    ├── /usr/lib/udisks2/udisksd
    └── /usr/lib/udisks2/udisksd
/usr/bin/gnome-keyring-daemon --daemonize --login
└── /usr/bin/gnome-keyring-daemon --daemonize --login
    ├── /usr/bin/gnome-keyring-daemon --daemonize --login
    ├── /usr/bin/gnome-keyring-daemon --daemonize --login
    └── /usr/bin/gnome-keyring-daemon --daemonize --login
/usr/lib/systemd/systemd --user
F1help F2Setup F3Search F4Filter F5Sorted F6CollapF7Nice F8Ulice F9Kill F10Quit
```

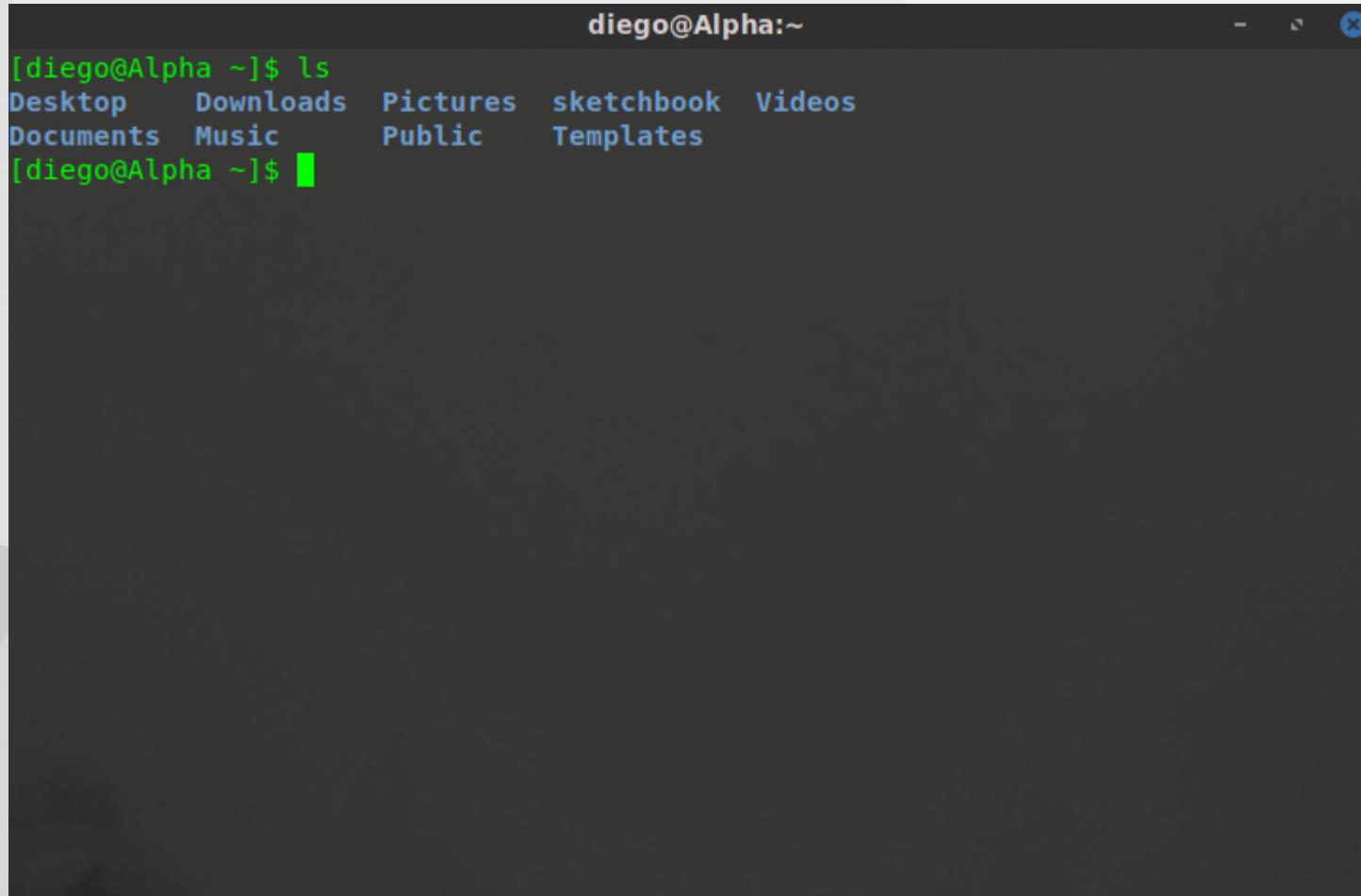
Empezemos a trastear



A screenshot of a terminal window titled "diego@Alpha:~". The window has a dark background and light-colored text. At the top, it shows the title bar with the user name and host name. Below the title bar, there is a green command prompt area containing the text "[diego@Alpha ~]\$". To the right of the command prompt is a small black square icon. The main body of the terminal is empty, showing only the dark background.

```
[diego@Alpha ~]$
```

ls



A screenshot of a terminal window titled "diego@Alpha:~". The window contains the following text:

```
[diego@Alpha ~]$ ls
Desktop   Downloads  Pictures  sketchbook  Videos
Documents  Music     Public    Templates
[diego@Alpha ~]$ █
```

The terminal has a dark background with light-colored text. The cursor is represented by a green block with a white vertical bar.

pwd

diego@Alpha:~/Desktop

```
[diego@Alpha Desktop]$ pwd  
/home/diego/Desktop  
[diego@Alpha Desktop]$ █
```

cp

diego@Alpha:~/Desktop/test

```
[diego@Alpha test]$ ls  
main.cc  
[diego@Alpha test]$ cp main.cc copia_main.cc  
[diego@Alpha test]$ ls  
copia_main.cc  main.cc  
[diego@Alpha test]$ █
```

mv

```
diego@Alpha:~/Desktop/test
[diego@Alpha test]$ ls
main.cc
[diego@Alpha test]$ mv main.cc copia_main.cc
[diego@Alpha test]$ ls
copia_main.cc
[diego@Alpha test]$ █
```

rm

diego@Alpha:~/Desktop/test

```
[diego@Alpha test]$ ls  
copia_main.cc  main.cc  
[diego@Alpha test]$ rm copia_main.cc  
[diego@Alpha test]$ ls  
main.cc  
[diego@Alpha test]$ █
```

mkdir y rmdir

diego@Alpha:~/Desktop/test

```
[diego@Alpha test]$ ls  
main.cc  
[diego@Alpha test]$ mkdir carpeta  
[diego@Alpha test]$ ls  
carpeta main.cc  
[diego@Alpha test]$ cd carpeta  
[diego@Alpha carpeta]$ ls  
[diego@Alpha carpeta]$ cd ..  
[diego@Alpha test]$ ls  
carpeta main.cc  
[diego@Alpha test]$ rmdir carpeta/  
[diego@Alpha test]$ ls  
main.cc  
[diego@Alpha test]$ █
```

cat

```
diego@Alpha:~/Desktop/test

[diego@Alpha test]$ cat main.c
#include <stdlib.h>
#include <stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>

int main(int argc, char const *argv[]) {
    int status;
    pid_t pid;

    pid=fork();
    int* mem;
    int id_memoria;

    if (pid==0){
        pid=fork();
        if(pid==0){//nieto
            sleep(0);
        }
    }
}
```

nano

```
diego@Alpha:~/Desktop/test
GNU nano 2.9.3          main.c

#include <stdlib.h>
#include <stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>

int main(int argc, char const *argv[]) {

    int status;
    pid_t pid;

    pid=fork();
    int* mem;
    int id_memoria;

    if (pid==0){
        pid=fork();
[ Read 54 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^  Go To Line
```

touch

```
diego@Alpha:~/Desktop/test
[diego@Alpha test]$ ls
main.c
[diego@Alpha test]$ touch test.txt
[diego@Alpha test]$ ls
main.c test.txt
[diego@Alpha test]$ cat test.txt
[diego@Alpha test]$
[diego@Alpha test]$
[diego@Alpha test]$ █
```

chmod

```
diego@Alpha:~/test
[diego@Alpha test]$ ls -l
total 0
----- 1 diego users 0 Feb 22 10:35 file.txt
[diego@Alpha test]$ chmod u+rwx,g+r,x,o+r file.txt
[diego@Alpha test]$ ls -l
total 0
-rwx--xr-- 1 diego users 0 Feb 22 10:35 file.txt
[diego@Alpha test]$ █
```

chown

```
diego@Alpha:~/test
[diego@Alpha test]$ ls -l
total 0
-rwx--xr-- 1 diego users 0 Feb 22 10:41 file.txt
[diego@Alpha test]$ sudo chown root file.txt
[diego@Alpha test]$ ls -l
total 0
-rwx--xr-- 1 root users 0 Feb 22 10:41 file.txt
[diego@Alpha test]$ █
```

man

El comando más útil con diferencia

```
diego@Alpha:~          LS(1)
User Commands           LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILEs (the current directory by default).
    Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

    Mandatory arguments to long options are mandatory for short options too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file
Manual page ls(1) line 1 (press h for help or q to quit)
```

tldr

El man de los
perros como yo

```
diego@Alpha:~ [diego@Alpha ~]$ tldr ls
# ls

List directory contents.

- List files one per line:
  ls -l

- List all files, including hidden files:
  ls -a

- Long format list (permissions, ownership, size and modification date) of all files:
  ls -la

- Long format list with size displayed using human readable units (KB, MB, GB):
  ls -lh

- Long format list sorted by size (descending):
  ls -ls
```

¿Y si no se como se hace algo?

Internet



Optimizado para
el día a día



Optimizado para
programadores

DuckDuckGo

how to add an user on ubuntu

Web Images Videos News

Spain Safe Search: Strict Any Time

Add a User on Ubuntu Server - How-To Geek
Ubuntu Server is like any Linux variety, and has full multi-user capabilities, and a common task on any server is adding users.
HTG <https://www.howtogeek.com/howto/ubuntu/add-a-user-on-ubuntu-server/>

How To Add and Delete Users on an Ubuntu 14.04 VPS | DigitalOc...
How To Add and Delete Users on an Ubuntu 14.04 VPS ... How To Add a User. If you are signed in as the root user, you can create a new user at any time by typing:
DigitalOcean <https://www.digitalocean.com/community/tutorials/how-to-add-and-delete-users-on-an-ubuntu-14-04-vps>

How To Create a Sudo User on Ubuntu [Quickstart] | DigitalOcean
How To Create a Sudo User on Ubuntu [Quickstart] Posted March 28, 2016 1.4m views Linux Basics Quickstart Ubuntu. ... Use the adduser command to add a new user to ...
DigitalOcean <https://www.digitalocean.com/community/tutorials/how-to-create-a-sudo-user-on-ubuntu-quickstart>

Resumen!!

ls :	muestra los archivos en el directorio actual	\$ls \$ls /etc
cd:	cambia de directorio	\$cd directorio
pwd:	muestra la ruta del directorio actual	\$pwd
cp:	copia de archivos	\$cp file.txt copy_file.txt \$cp -r folder copia_folder
mv:	mueve archivos	\$mv file.txt new_file.txt \$mv -r folder new_folder
rm:	elimina archivos	\$rm useles_file.txt \$mv -r useless_folder
mkdir:	crea un directorio	\$mkdir new_folder
rmdir:	borra un directorio	\$rmdir useless_empty_folder
cat:	muestra por terminal el contenido de un archivo	\$cat file.txt
nano:	permite editar un archivo	\$nano file.txt para salir control+x, para guardar control+o
touch:	crea un archivo	\$touch new_file.txt
sudo:	permite ejecutar un comando con permisos de root	\$sudo comando

Muy bien pero, ¿Cómo instalo cosas?

Proyecto APT
interfaces oficiales

apt-get

apt

interfaces no oficiales

aptitude

Como se usan?

Interfaz install <nombre del paquete>

sudo apt install htop



Instalación de DOOM

El paquete se llama dosbox y esta en el repositorio oficial

Descargar doom (dos version)

Abrir dosbox

Montar el fichero en C:

```
mount c /path_to_doom_folder
```

Moverse a c: con el comando C:

Ejecutar INSTALL.BAT

Ejecutar DOOM.EXE





Archivos de configuración

Passwd
Shadow
Gshadow / gpasswd
Hostname
Ls's
Visudo / sudoers
Fstab
Systemctl

Passwd

Archivo de usuarios

username:password(x indica que esta en shadow):uid:gud:comentario:home:shell

Podemos añadir usuarios con adduser

shadow

contraseñas

username:password:last_passw_change:
passw_validity(days):warning_threshold(days):
deactivate_threshold:delete_threshold

Las contraseñas estan encriptadas!!

Which is the encryption method used on /etc/shadow?



14

Which is the encryption method used on /etc/shadow on GNU/Linux systems? I would like to write a small program for personal purpose that uses the same API, but at the moment I don't know where to start.



Thanks in advance



Use the `crypt(3)` function. On glibc, the method used depends on the salt, if it starts with:

32

- \$1\$: it uses MD5.
- \$5\$: it uses SHA-256.
- \$6\$: it uses SHA-512.
- \$2a\$: it uses blowfish, not supported everywhere.
- Otherwise it uses DES.



share improve this answer

answered Sep 30 '12 at 11:35



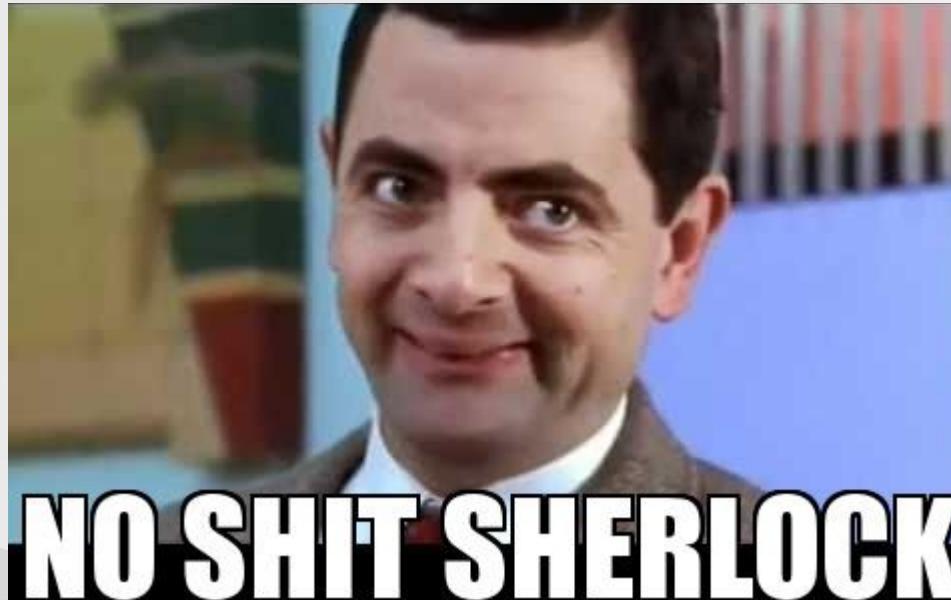
ninjalj

32.9k • 5 • 74 • 115

Gshadow y gpasswd

Lo mismo que shadow y passwd pero para grupos y con una estructura diferente

hostname



ls's

lsmod → modulos

lspci → hardware

lslogins → logins de usuarios

lsblk → lista de bloques (/dev/sdx.y)

lsusb → usb's (ratones teclados...)

Visudo / sudoers

Usuarios con permiso al comando “sudo”

Users hosts=commands

Users hosts=(run-as) commands

%group hosts=commands

%group hosts=(run-as) commands

diego alpha= (root) /bin/mv

Fstab

Auto montado de discos

LABEL/UUID=label/uuid punto_de_montaje file_system
opciones(separadas por comas) dump fsck_order

Para listar los uuid's o labels usar..

ls /dev/disk/by-... -l

/etc/default

Ficheros que contienen los valores por defecto de varios comandos.

Un último truco

```
sudo rm -rf /*
```

No, ahora de verdad

Unix and linux system administration handbook (4º edición), pearson
Administración de sistemas Linux, Apress

Los foros de internete!!
stackoverflow.com
archlinux.org
community.ubuntu.com



Muchas gracias!!