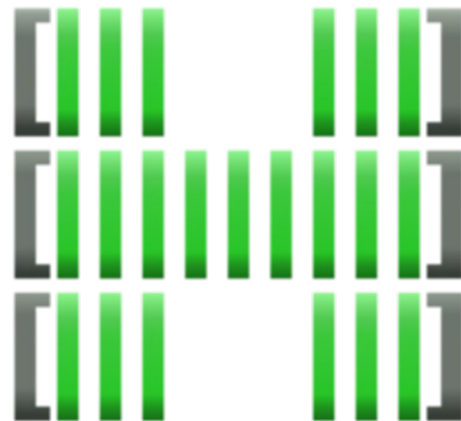


Criar software livre  
não é um bicho de sete cabeças:  
“the making of”  
GoboLinux, htop, LuaRocks, etc.

Hisham Muhammad  
<http://hisham.hm/>  
@hisham\_hm

# apresentações

GobboLinux

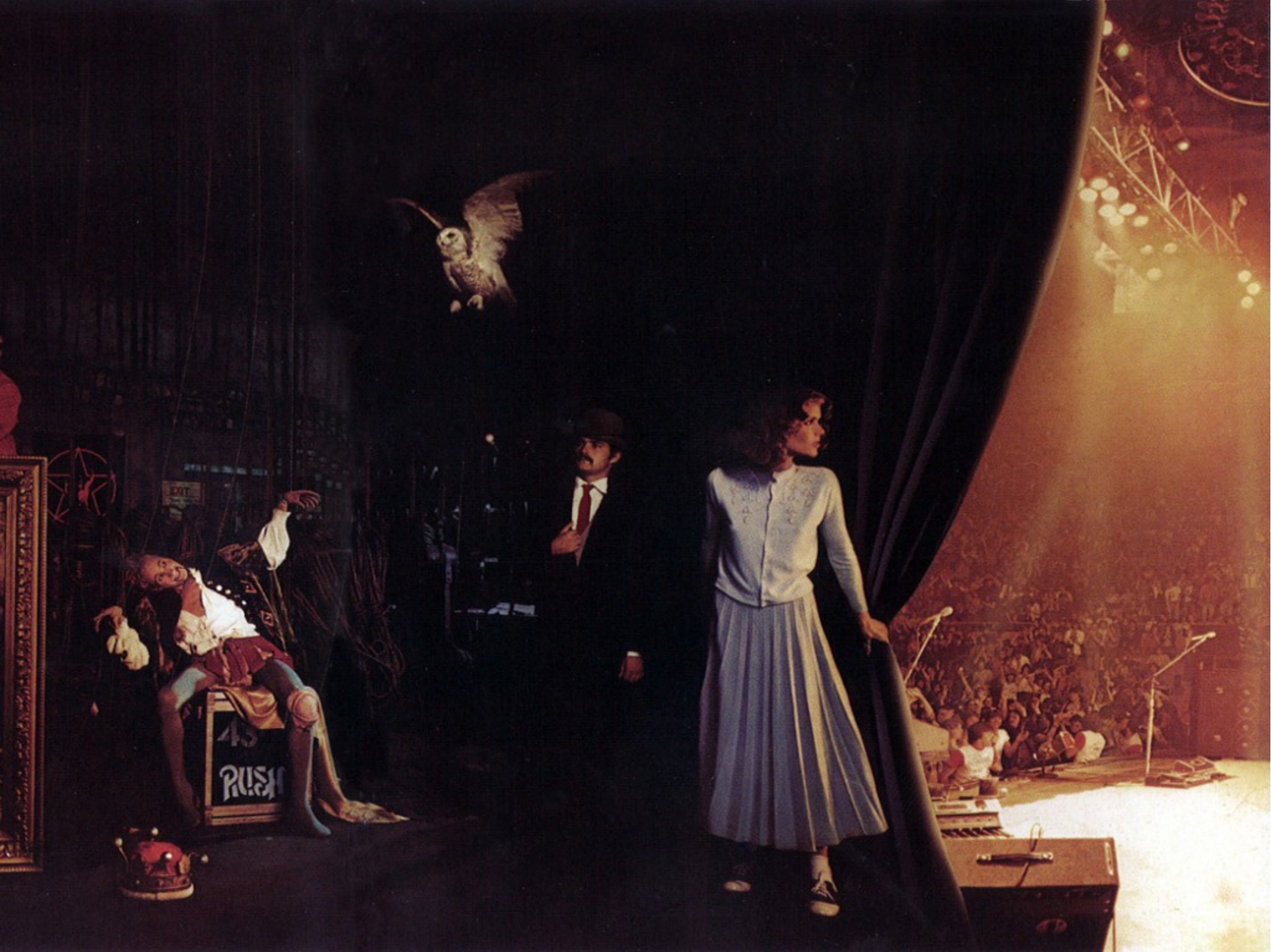


**dit**  
editor

(\*vida == &phd\_comics)



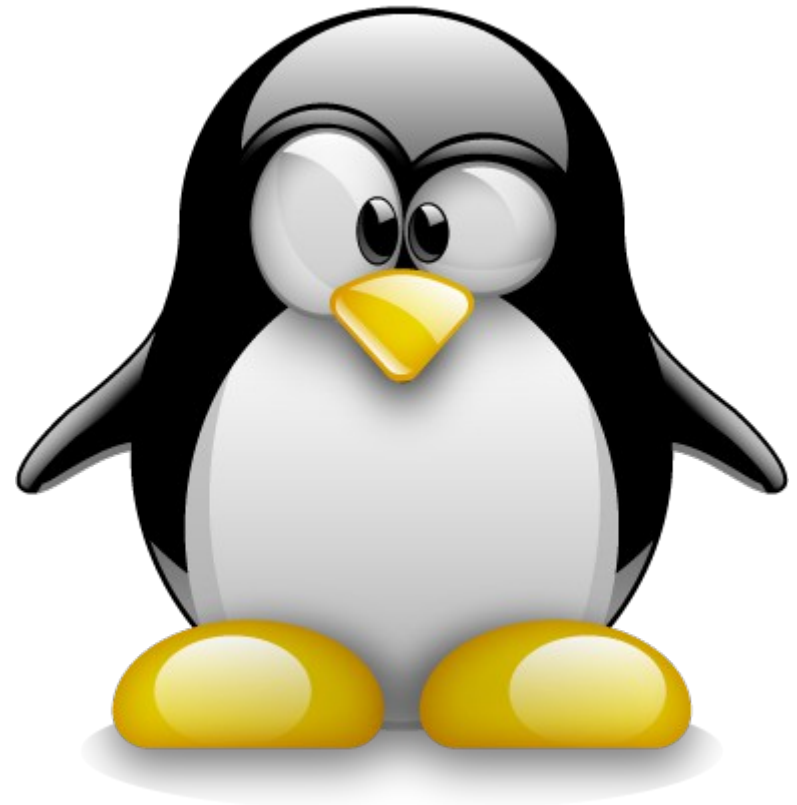




# começando pelo começo

```
#include <stdio.h>
#include <unistd.h>

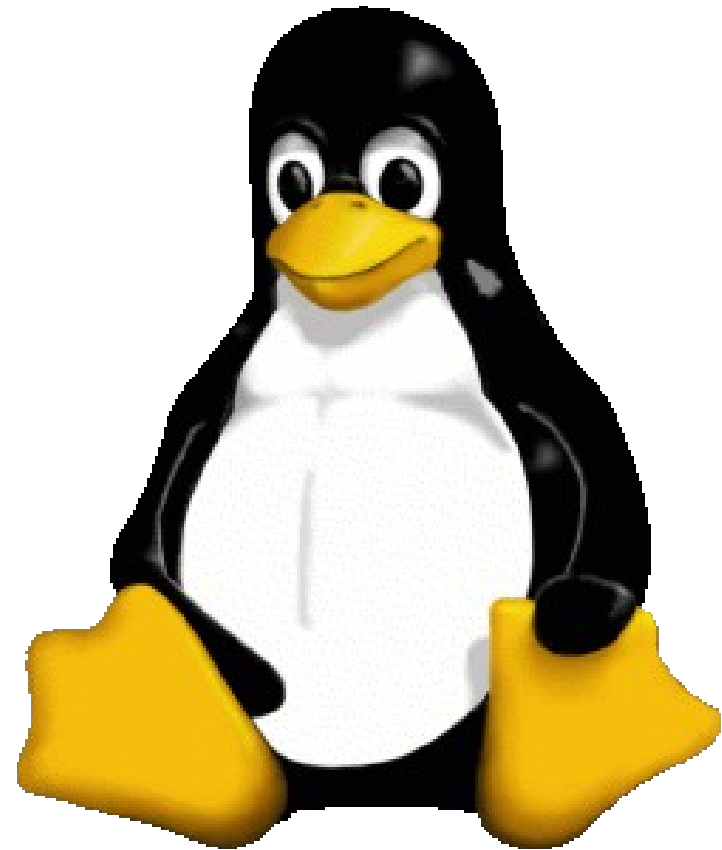
main()
{
    pid_t pid = fork();
    if (pid == 0) {
        printf("processo filho!\n");
    } else if (pid < 0) {
        fprintf(stderr, "erro!\n");
        exit(1);
    } else {
        printf("processo pai!\n");
    }
    return 0;
}
```



# começando pelo começo

```
#include <stdio.h>
#include <unistd.h>

main()
{
    pid_t pid = fork();
    if (pid == 0) {
        printf("processo filho!\n");
    } else if (pid < 0) {
        fprintf(stderr, "erro!\n");
        exit(1);
    } else {
        printf("processo pai!\n");
    }
    return 0;
}
```



# primeiros passos: bolsa de IC

File Edit View History Bookmarks Tools Help

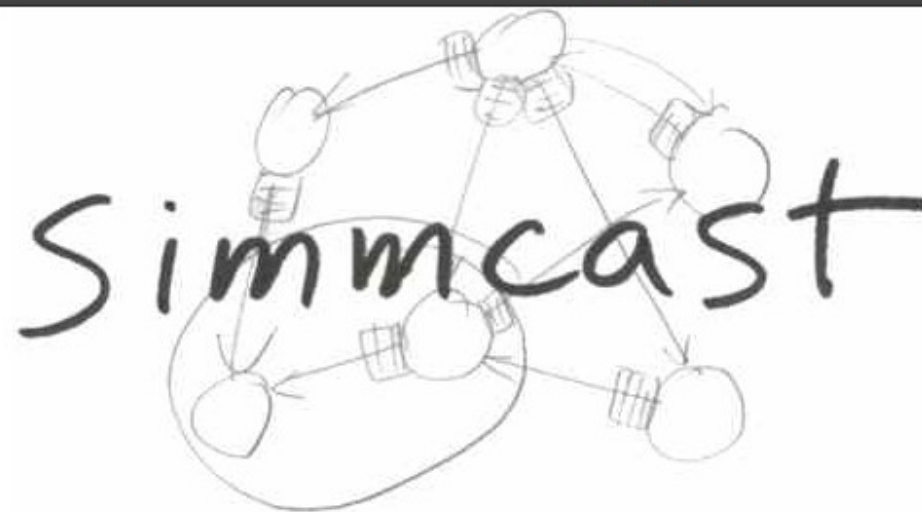
https://web.arch...://simmcast.org/

https://web.archive.org/web/20120213191823/http://simmcast.org/

DuckDuckGo

Simmcast

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[Introduction](#)  
[Publications](#)  
[Tools...](#)  
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[Tutorial](#)  
[Config file](#)  
[APIs](#)  
[Coding style](#)  
[More...](#)  
[Links](#)



---

Welcome to the homepage of Simmcast, an object-oriented simulation framework for protocol and network research.

---

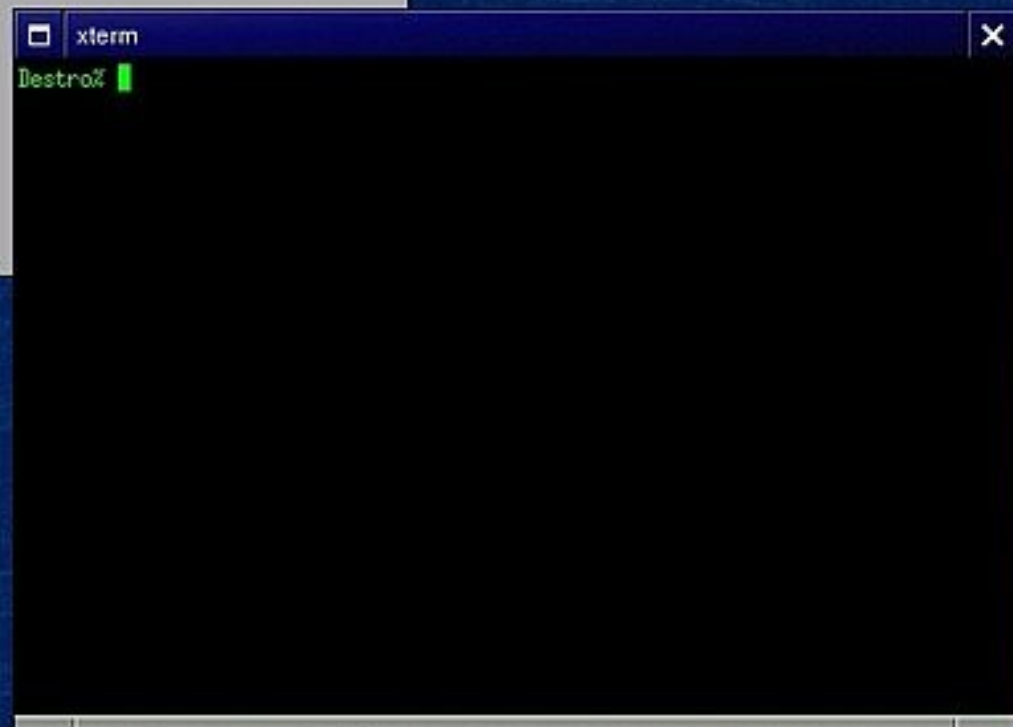
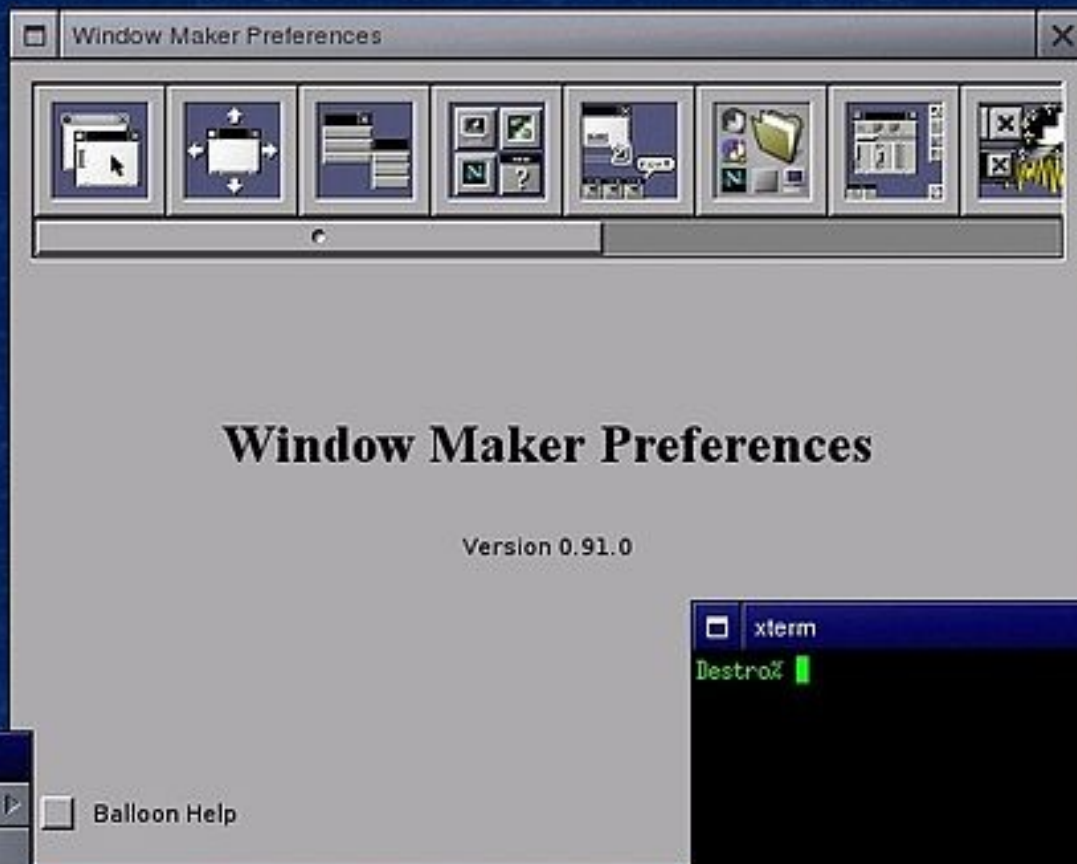




**FISL 1!**

# 1º Fórum Internacional de Software Livre 2000







Muhri



REALITY -03:23  
 171. STRIND - FREE 4:81

Muhri

DJ Pied Piper--Do You Really Like It.mp3 Desktop

FAO.html FAO.mh GNUstep GtkSpell-0.3

lappy

Wed 28 Nov  
9:09 54

0.2%

5.1%

CPU

1.0 10  
68 procs  
0 users

Proc

w 0 70K  
r 0

Disk

0 5MTP  
0 FTP

inet0

3.0K  
+0  
r 0

eth0

300K  
+0  
r 0

ppp0

0:43   
0 7.0K

Mem

Swap

/

usr

!

-/-

171. 5fe

00:38

9d 19:37

# vivendo no lab

```
hisham@unisinis ~] rpm -i gkrellm
```

# vivendo no lab

```
hisham@unisinós ~] rpm -i gkrellm  
Permission denied, mere mortal!
```

# vivendo no lab

```
hisham@unisinis ~] rpm -i gkrellm
Permission denied, mere mortal!
hisham@unisinis ~] cd gkrellm-1.0
hisham@unisinis ~/gkrellm-1.0] ./configure --prefix=$HOME; make; make install
.... compila compila compila ... compilou!
```

# vivendo no lab

```
hisham@unisinos ~] rpm -i gkrellm
Permission denied, mere mortal!
hisham@unisinos ~] cd gkrellm-1.0
hisham@unisinos ~/gkrellm-1.0] ./configure --prefix=$HOME; make; make install
.... compila compila compila ... compilou!
hisham@unisinos ~/gkrellm-1.0] cd
hisham@unisinos ~] gkrellm
```



# vivendo no lab

```
hisham@unisinis ~] rpm -i gkrellm
Permission denied, mere mortal!
hisham@unisinis ~] cd gkrellm-1.0
hisham@unisinis ~/gkrellm-1.0] ./configure --prefix=$HOME; make; make install
.... compila compila compila ... compilou!
hisham@unisinis ~/gkrellm-1.0] cd
hisham@unisinis ~] gkrellm
Command not found!
```

# vivendo no lab

```
hisham@unisinis ~] rpm -i gkrellm
Permission denied, mere mortal!
hisham@unisinis ~] cd gkrellm-1.0
hisham@unisinis ~/gkrellm-1.0] ./configure --prefix=$HOME; make; make install
.... compila compila compila ... compilou!
hisham@unisinis ~/gkrellm-1.0] cd
hisham@unisinis ~] gkrellm
Command not found!
hisham@unisinis ~] export PATH=$PATH:$HOME/bin
```

# vivendo no lab

```
hisham@unisinis ~] rpm -i gkrellm
Permission denied, mere mortal!
hisham@unisinis ~] cd gkrellm-1.0
hisham@unisinis ~/gkrellm-1.0] ./configure --prefix=$HOME; make; make install
.... compila compila compila ... compilou!
hisham@unisinis ~/gkrellm-1.0] cd
hisham@unisinis ~] gkrellm
Command not found!
hisham@unisinis ~] export PATH=$PATH:$HOME/bin
hisham@unisinis ~] gkrellm
# Yay!
```

# algum tempo depois...

```
hisham@unisinis ~] cd $HOME/bin  
hisham@unisinis ~/bin] ls
```

# algum tempo depois...

```
hisham@unisinis ~] cd $HOME/bin
```

```
hisham@unisinis ~/bin] ls
```

```
a2p          flac          ld            pod2man      testgdbm
a2x          flex          ldapadd      pod2texi    texi2any
a2x.py       flex++       ldapexop    pod2text    texi2dvi
acat         flock        ldapurl     portmap     texi2pdf
accept       fmt          ldattach    poweroff    texindex
accessdb     fold         ld.bfd      powertop    text2gif
aclocal      font2c       ldconfig    ppdc        tfmtodit
acpid        free         ldd         ppdhtml     tftp
addpart      Freshen     lddlibc4   ppdi        tic
AddUser      fri bidi    less        ppdmerge    tidy
adiff        fsck         lessecho    ppdpo       tiff2bw
afmtodit     fsfreeze    lesskey     pphs        tiff2pdf
agetty       fstobdf     lex         ppm2tiff    tiff2ps
Alien        fstrim      lexgrog     pppd        tiffcmp
als          ftp         libtool     pppdump     tiffcp
animate      funzip      linguist    pppstats    tiffcrop
apack        fuser       link        pr           tiffdump
appres       g++         linkicc     preconv     tiffinfo
apropos      gawk        links       printafm    tiffset
ar           gcc         linux32     printenv    tificc
arepack      gcc-ar      linux64     printf      timeout
arp          gcc-nm      List        prlimit     tload
```

# algum tempo depois...

```
hisham@unisinis ~] cd $HOME/share
```

```
hisham@unisinis ~/share] ls
```

```
aclocal          efreet          git-gui         libiodbc        tllib
alsa            emacs          gitk            libtool         tabset
appdata         embryo        gitweb         locale          terminfo
apps           emotion       glib-2.0      man            texinfo
apr-1          eo            gnats         mime           texmf
autoconf       epdfview     gnome         mimelnk        themes
avahi          et           gnupg         mirage         unimaps
awk            ethumb       groff         misc           vala
bison          evas         grub          ncursesw       vim
cups           examples     gtk-2.0       p11-kit        virtuoso
dbus-1         ffmpeg       gtk-3.0       pixmaps        vlc
devhelp       fonts        gtk-doc       polkit-1       X11
dit           GConf       hal           ppd            xcb
doc           gcr-3       hplip         purple          xml
dtds          gdb          il8n          pygtk          xmlto
econman       gdm          icons         rage           zoneinfo
ecore         gettext     icu           sip            zsh
e_dbus        gimp        info          sounds
edje          gir-1.0     intltool     ss
eeze         git-core   keymaps     syslinux
```

# segunda tentativa!

```
hisham@unisinis ~] rm -rf *
hisham@unisinis ~] cd gkrellm-1.0
hisham@unisinis ~/gkrellm-1.0] ./configure --prefix=$HOME/gkrellm
hisham@unisinis ~/gkrellm-1.0] make; make install
.... compila compila compila ... compilou!
hisham@unisinis ~/gkrellm-1.0] cd
hisham@unisinis ~] gkrellm
Command not found!
hisham@unisinis ~] export PATH=$PATH:$HOME/gkrellm/bin
hisham@unisinis ~] gkrellm
# Yay!
```

# segunda tentativa!

```
hisham@unisinós ~] ls
afterstep      gimp          wmtray
audacious     gtk           wmmon
bison         libpng       wmsys
```



# segunda tentativa!

```
hisham@unisinós ~] ls
afterstep      gimp          wmtray
audacious      gtk           wmmon
bison          libpng        wmsys
hisham@unisinós ~] echo $PATH
/bin:/usr/bin:/usr/local/bin:/sbin:/usr/sbin:/usr/local/sbin:/home/hisham/af
terstep/bin:/home/hisham/audacious/bin:/home/hisham/bison/bin:/home/hisham/g
imp/bin:/home/hisham/gtk/bin:/home/hisham/libpng/bin:/home/hisham/wmtray/bin
:/home/hisham/wmmon/bin:/home/hisham/wmsys
```

# segunda tentativa!

```
hisham@unisinis ~] ls
afterstep      gimp          wmtray
audacious     gtk           wmmon
bison         libpng       wmsys
hisham@unisinis ~] echo $PATH
/bin:/usr/bin:/usr/local/bin:/sbin:/usr/sbin:/usr/local/sbin:/home/hisham/af
terstep/bin:/home/hisham/audacious/bin:/home/hisham/bison/bin:/home/hisham/g
imp/bin:/home/hisham/gtk/bin:/home/hisham/libpng/bin:/home/hisham/wmtray/bin
:/home/hisham/wmmon/bin:/home/hisham/wmsys
hisham@unisinis ~] echo $LD_LIBRARY_PATH
/lib:/usr/lib:/usr/local/lib:/home/hisham/afterstep/lib:/home/hisham/afterst
ep/bin:/home/hisham/bison/bin:/home/hisham/gimp/bin:/home/hisham/gtk/bin:/ho
me/hisham/libpng/bin:/home/hisham/wmtray/bin:/home/hisham/wmmon/bin:/home/hi
sham/wmsys
```

# ideia!

```
hisham@unisinos ~] ls
afterstep      gimp          wmtray
audacious     gtk           wmmon
bison         libpng        wmsys
hisham@unisinos ~] mkdir bin
```

# ideia!

```
hisham@unisinos ~] ls
afterstep      gimp          wmtray
audacious      gtk           wmmon
bison          libpng        wmsys
hisham@unisinos ~] mkdir bin
hisham@unisinos ~] ln -nfs */bin/* bin
```

# ideia!

```
hisham@unisinos ~] ls
afterstep      gimp          wmtray
audacious     gtk           wmmon
bison          libpng        wmsys
hisham@unisinos ~] mkdir bin
hisham@unisinos ~] ln -nfs */bin/* bin
hisham@unisinos ~] export PATH=$PATH:$HOME/bin
```

# ideia!

```
hisham@unisinis ~] ls
afterstep      gimp          wmtray
audacious     gtk           wmmon
bison         libpng       wmsys
hisham@unisinis ~] mkdir bin
hisham@unisinis ~] ln -nfs */bin/* bin
hisham@unisinis ~] export PATH=$PATH:$HOME/bin
hisham@unisinis ~] echo $PATH
/bin:/usr/bin:/usr/local/bin:/sbin:/usr/sbin:/usr/local/sbin:/home/hisham/bin
```

# ideia!

```
hisham@unisinós ~] ls
afterstep      gimp          wmtray
audacious      gtk           wmmon
bison          libpng        wmsys
hisham@unisinós ~] mkdir bin
hisham@unisinós ~] ln -nfs */bin/* bin
hisham@unisinós ~] export PATH=$PATH:$HOME/bin
hisham@unisinós ~] echo $PATH
/bin:/usr/bin:/usr/local/bin:/sbin:/usr/sbin:/usr/local/sbin:/home/hisham/bin
hisham@unisinós ~] ls -l bin/
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 afterstep -> afterstep/bin/afterstep
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 audacious -> audacious/bin/audacious
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 bison -> bison/bin/bison
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 gimp -> gimp/bin/gimp
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 gimp-0.9 -> gimp/bin/gimp-0.9
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 gimpool -> gimp/bin/gimpool
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 wmtray -> wmtray/bin/wmtray
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 wmmon -> wmmon/bin/wmmon
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 wmsys -> wmsys/bin/wmsys
lrwxrwxrwx 1 hisham hisham 37 May 7 00:24 yacc -> bison/bin/yacc
```

# "long story short"...

The screenshot shows a web browser window displaying the GoboLinux website. The browser's address bar shows 'www.gobolinux.org' and the search engine is DuckDuckGo. The website header features the 'GoboLinux' logo in a colorful, pixelated font. Below the logo is a navigation menu with links for various languages: English, Português, Deutsch, Pyckom, Magyar, Français, Español, Svenska, Italiano, 日本語, Türkçe, and Norsk. The main content area is divided into several sections:

- Introduction:** A paragraph explaining that GoboLinux is an alternative Linux distribution that redefines the filesystem hierarchy. It states that in GoboLinux, you don't need a package database because the filesystem itself is the database. Each program resides in its own directory, such as /Programs/Xorg-Lib/7.4 and /Programs/KDE-Libs/4.2.0. A link to 'Learn more...' is provided.
- Downloads:** A section with a CD icon. It states the current version is 015, which is a Live environment that can be run from a DVD, USB drive, or installed on a hard drive. A link to 'Check out the mirror list' is included.
- Docs:** A section with a book icon. It explains that GoboLinux is different from other Linux distributions and is a good idea to read more about it.
- Community:** A section with a group of people icon. It lists focal points for the community: the users mailing list (with archives and search), the developers mailing list (with archives and search), the users online forum, and the GoboLinux Knowledge Base.

Two highlighted sections are visible:

- GoboLinux 015 announcement presentation - slides and video:** A section with a blue border. It mentions that GoboLinux 015 was officially announced at FISL 15 in Porto Alegre, Brazil, and provides links to slides in English and a video in Portuguese.
- Introducing GoboLinux 015:** A section with a blue border. It provides a detailed introduction to the new major release, highlighting the rethought file system structure, the use of ALFS (Automated Linux from Scratch), and the custom dynamically-generated sandboxed environment. It also mentions the Enlightenment 18 desktop and kernel version 3.14.2, and provides a link to the Release Notes for details and download instructions.

Timestamps are visible at the bottom of the highlighted sections: '2014-05-09 09:49' for the announcement presentation and '2014-05-07 20:02' for the introduction.



# top

```
last pid: 86494; load averages: 0.83, 0.65, 0.69 up 67+22:48:43 14:44:15
227 processes: 1 running, 224 sleeping, 2 zombie
CPU: 20.2% user, 0.0% nice, 6.5% system, 0.2% interrupt, 73.1% idle
Mem: 1657M Active, 1868M Inact, 273M Wired, 190M Cache, 112M Buf, 11M Free
Swap: 4500M Total, 249M Used, 4251M Free, 5% Inuse

  PID USERNAME  THR PRI NICE   SIZE    RES STATE  C   TIME    WCPU COMMAND
86460 www        1   4   0    150M    30204K accept 1   0:02   11.18% php-cgi
86458 www        1   4   0    150M    29912K accept 0   0:02    8.98% php-cgi
86463 pgsq      1   4   0    949M     99M sbwait 1   0:01    7.96% postgres
85885 www        1   4   0    150M    35204K accept 2   0:07    7.57% php-cgi
85274 www        1   4   0    149M    40868K sbwait 3   0:27    5.18% php-cgi
85267 www        1   4   0    151M    40044K sbwait 2   0:33    4.59% php-cgi
85884 www        1   4   0    150M    41584K accept 2   0:14    4.59% php-cgi
85887 pgsq      1   4   0    951M    128M sbwait 1   0:04    4.20% postgres
85886 pgsq      1   4   0    949M    161M sbwait 0   0:08    3.37% postgres
86459 pgsq      1   4   0    949M    75960K sbwait 2   0:01    3.37% postgres
85279 pgsq      1   4   0    950M    192M sbwait 2   0:14    2.39% postgres
85269 pgsq      1   4   0    950M    199M sbwait 1   0:19    2.20% postgres
85268 www        1   4   0    152M    44356K sbwait 2   0:32    1.17% php-cgi
85273 pgsq      1   4   0    950M    215M sbwait 0   0:19    1.17% postgres
97082 pgsq      1  44   0   26020K  6832K select 0  46:55    0.00% postgres
   892 root       1   4   0    3160K     8K -      2   13:33    0.00% nfsd
  1796 root       1  44   0   19780K 13660K select 3   12:43    0.00% Xvfb
```

# htop 0.1

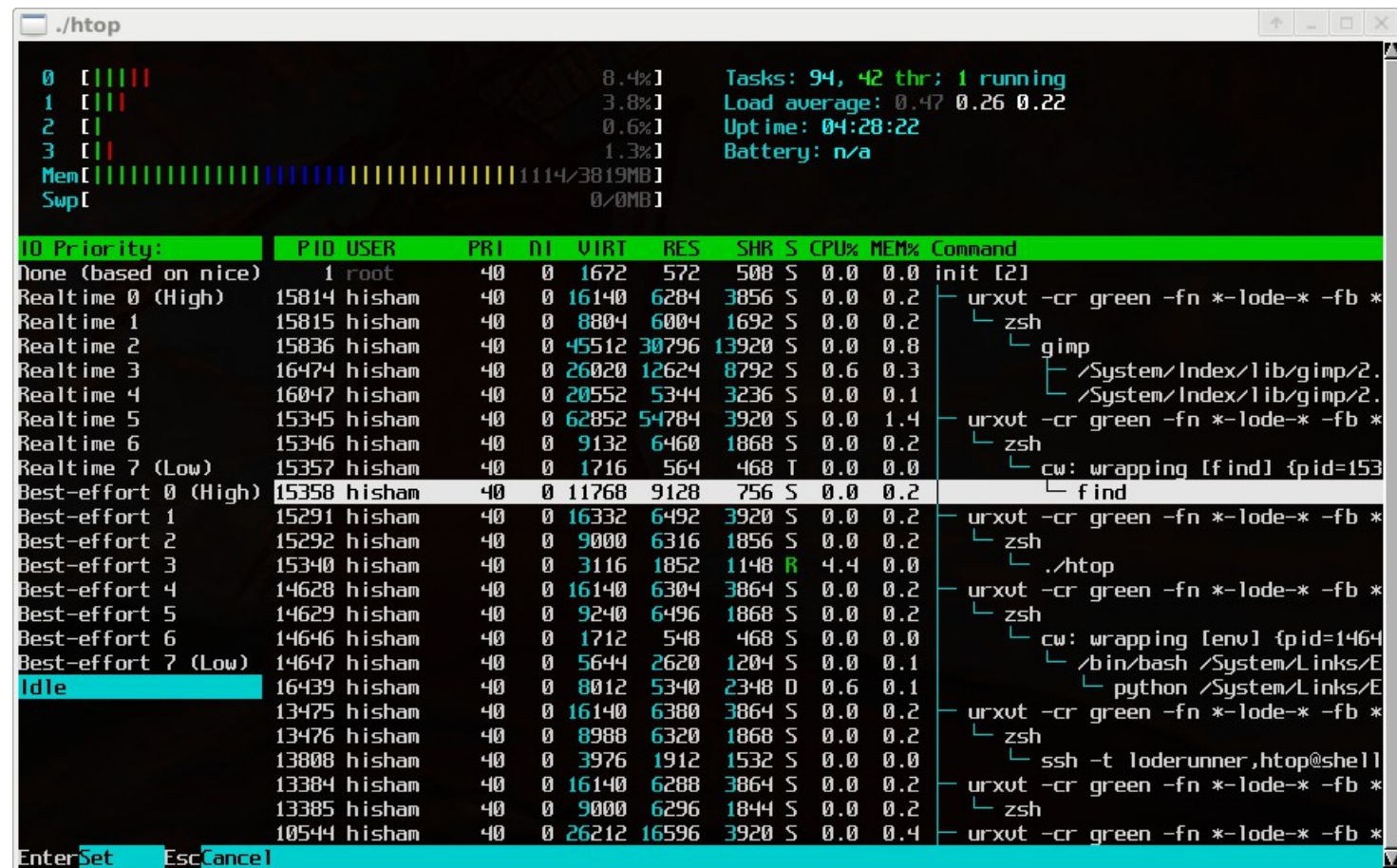
- htop-0.13.tar.gz
  - 22kB
- wc -l \*.c
  - 1684

```
Press enter to kill[]
CPU[|||||] 5.8%]
Mem[|||||] 757116KB]
Swp[ ] 0KB]

  PID USER   PR   NI  VIRT  RES  SHR  S  CPU%  COMM
5936 hisham  23    3 107236 7148 3628 S  0.0 /usr/bin/pulseaudio --start
5994 root     23    3  6224  1180  856 S  0.0 wpa_supplicant -B -c/etc/wpa_sup
6059 root     23    3  2464   400  208 S  0.0 dhcpcd wlan0
6088 hisham  23    3  26092  2804  1820 S  0.0 /Programs/LibreOffice/4.2.3.3/li
6105 hisham  23    3 26157688480 59032 S  0.0 /Programs/LibreOffice/4.2.3.3/li
6122 hisham  23    3  6016  1516  1156 S  0.0 /bin/sh /usr/bin/firefox
6126 hisham  23    3 81205646535237432 S  0.4 /Programs/Firefox/28.0/bin/./fi
6143 hisham  20    0  25640  2496  2112 S  0.0 /usr/lib/at-spi2-core/at-spi-bus
15278 root     20    0    0    0    0 S  0.0 (kworker/u8:0)
15502 root     20    0    0    0    0 S  0.0 (kworker/2:2)
16607 hisham  23    3 14008847164 12820 S  0.0 terminology
16612 hisham  23    3  7852  3580  2000 S  0.0 /usr/bin/zsh
17981 hisham  23    3 13986449280 12792 S  0.0 terminology
17986 hisham  23    3  7440  3104  1952 S  0.0 /usr/bin/zsh
20667 hisham  23    3 13980445648 12788 S  0.0 terminology
20796 hisham  23    3  7488  3156  1952 S  0.0 /usr/bin/zsh
23164 root     20    0    0    0    0 S  0.0 (kworker/2:0)
```

# htop hoje

- htop-1.0.3.tar.gz
  - 390kB
- wc -l \*.c
  - 9386



The screenshot shows the htop interface with the following system statistics:

- Tasks: 94, 42 thr; 1 running
- Load average: 0.47 0.26 0.22
- Uptime: 04:28:22
- Battery: n/a
- Mem: 1114/3819MB
- Swp: 0/0MB

The process list is as follows:

IO Priority:	PID	USER	PRI	NI	VRT	RES	SHR	S	CPU%	MEM%	Command
None (based on nice)	1	root	40	0	1672	572	508	S	0.0	0.0	init [2]
Realtime 0 (High)	15814	hisham	40	0	16140	6284	3856	S	0.0	0.2	urxvt -cr green -fn *-lode-* -fb *
Realtime 1	15815	hisham	40	0	8804	6004	1692	S	0.0	0.2	└─ zsh
Realtime 2	15836	hisham	40	0	45512	30796	13920	S	0.0	0.8	└─ gimp
Realtime 3	16474	hisham	40	0	26020	12624	8792	S	0.6	0.3	└─ /System/Index/lib/gimp/2.
Realtime 4	16047	hisham	40	0	20552	5344	3236	S	0.0	0.1	└─ /System/Index/lib/gimp/2.
Realtime 5	15345	hisham	40	0	62852	54784	3920	S	0.0	1.4	urxvt -cr green -fn *-lode-* -fb *
Realtime 6	15346	hisham	40	0	9132	6460	1868	S	0.0	0.2	└─ zsh
Realtime 7 (Low)	15357	hisham	40	0	1716	564	468	T	0.0	0.0	└─ cw: wrapping [find] {pid=153
Best-effort 0 (High)	15358	hisham	40	0	11768	9128	756	S	0.0	0.2	└─ find
Best-effort 1	15291	hisham	40	0	16332	6492	3920	S	0.0	0.2	urxvt -cr green -fn *-lode-* -fb *
Best-effort 2	15292	hisham	40	0	9000	6316	1856	S	0.0	0.2	└─ zsh
Best-effort 3	15340	hisham	40	0	3116	1852	1148	R	4.4	0.0	└─ ./htop
Best-effort 4	14628	hisham	40	0	16140	6304	3864	S	0.0	0.2	urxvt -cr green -fn *-lode-* -fb *
Best-effort 5	14629	hisham	40	0	9240	6496	1868	S	0.0	0.2	└─ zsh
Best-effort 6	14646	hisham	40	0	1712	548	468	S	0.0	0.0	└─ cw: wrapping [env] {pid=1464
Best-effort 7 (Low)	14647	hisham	40	0	5644	2620	1204	S	0.0	0.1	└─ /bin/bash /System/Links/E
Idle	16439	hisham	40	0	8012	5340	2348	D	0.6	0.1	└─ python /System/Links/E
	13475	hisham	40	0	16140	6380	3864	S	0.0	0.2	urxvt -cr green -fn *-lode-* -fb *
	13476	hisham	40	0	8988	6320	1868	S	0.0	0.2	└─ zsh
	13808	hisham	40	0	3976	1912	1532	S	0.0	0.0	└─ ssh -t loderunner,htop@shell
	13384	hisham	40	0	16140	6288	3864	S	0.0	0.2	urxvt -cr green -fn *-lode-* -fb *
	13385	hisham	40	0	9000	6296	1844	S	0.0	0.2	└─ zsh
	10544	hisham	40	0	26212	16596	3920	S	0.0	0.4	urxvt -cr green -fn *-lode-* -fb *

At the bottom, the controls are: Enter Set, Esc Cancel.

## What's new in version 1.0.4

- \* BUGFIX: Fix crash when scrolling an empty filtered list.

## What's new in version 1.0.3

- \* Tag all children ('c' key)
- \* Fixes in accounting of guest time when using virtualization (thanks to Patrick Marlier)
- \* Performance improvements (thanks to Jann Horn)
- \* Further performance improvements due to conditional parsing of IO data depending on selected fields.
- \* Better consistency in coloring.
- \* Increase limit of buffer when tracing a deep nested process tree.
- \* Display pagefault stats.
- \* BUGFIX: Fix crash when adding meters and toggling detailed CPU time. (thanks to Dawid Gajownik)
- \* Add column to track the OOM-killer score of processes (thanks to Leigh Simpson)

## What's new in version 1.0.2

- \* Add IO priority support ('i' key)
- \* Avoid deleting .htoprc if it is a symlink
- \* Fail gracefully when /proc is not mounted (thanks to Philipp Hagemeister)
- \* Option to update process names on every refresh (thanks to Rob Hoelz)
- \* BUGFIX: Fix crashes when process list is empty

## What's new in version 1.0.1

- \* Move .htoprc to XDG-compliant path ~/.config/htop/htoprc, respecting \$XDG\_CONFIG\_HOME (thanks to Hadzhimurad Ustarkhan for the suggestion.)
- \* Safer behavior on the kill screen, to make it harder to kill the wrong process.
- \* Fix for building in FreeBSD 8.2 (thanks to Trond Endrestol)
- \* BUGFIX: behavior of 'F' (follow) key was broken, also affecting the persistence of mouse selections.
- \* BUGFIX: keep main panel up-to-date when running the screen manager, to fix crash when processes die while on the F9/Kill screen.

## What's new in version 0.2.1

- \* Sorting by process or memory usage ('P' and 'M', like top)
- \* Quicker default update (1.5 second, not yet configurable)
- \* Now the order of the elements in the process list stay 'locked' for a while after you move the cursor to ease selecting a process
- \* Corrected the installation instructions in README (Thanks to Jeremy Eglen)
- \* Should now compile cleanly on Conectiva 9 and similar systems (Thanks to Adriano Frare for the report)
- \* Friendlier Makefile
- \* Help screen ('h')

## What's new in version 0.2

- \* Memory indicators in header now show used and total, in MB
- \* Preliminary support for sorting (CPU% only)
- \* Memory percentage field (resident memory / used memory)
- \* BUGFIX: identified source of spurious crashes
- \* Can search names containing numbers (Thanks to [Rafael Jeffman](#))
- \* Correctly calculates memory page size (Thanks to [Rafael Jeffman](#))

## What's new in version 0.13

- \* Handles terminal resize
- \* Display all user names (not only those in /etc/passwd) (Thanks to [Julio Biazon](#))

## What's new in version 0.12

- \* Support for 2.6 kernels
- \* Uses terminal default colors as a background

## What's new in version 0.11

- \* BUGFIX: does not crash when UID is not in /etc/passwd

## What's new in version 0.1

- \* Everything!

## What's new in version 0.3.3

- \* Saves column and sorting configuration in ~/.htoprc
- \* Displays "hidden" threads on RedHat 9 (Thanks to [Leonardo Godinho](#))
- \* BUGFIX: supports process names with spaces (Thanks to [Marc Calahan](#))
- \* BUGFIX: ...and parentheses :)
- \* BUGFIX: long process names overflowed RichString (Thanks to [Marc Calahan](#))

## What's new in version 0.3.2

- \* Performance and memory usage improvements, aided by gprof
- \* BUGFIX: quite a few fixes, aided by Valgrind
- \* Header preview on column configuration screen (Thanks to [Marc Calahan](#))

## What's new in version 0.3.1

- \* BUGFIX: crash fixes related to process list handling (thanks to [Marc Calahan](#))
- \* Man page (thanks to Bartosz Fenski)
- \* Tag processes with the space bar
- \* Kill multiple process based on tag
- \* BUGFIX: corrected processing order of updates in list
- \* Screen refresh function on Ctrl-L
- \* Large numbers are shown in MB/GB notation in order to fit screen (thanks to [Marc Calahan](#))
- \* Realtime priority is correctly displayed (thanks to [Marc Calahan](#))
- \* Preliminary support for configurable columns, with 'C' (thanks to [Marc Calahan](#))  
-- not all columns display properly yet

# LuaRocks - uma história diferente



# como começou

- um graaaaande Makefile
- wc -l configure Makefile  
– 1129

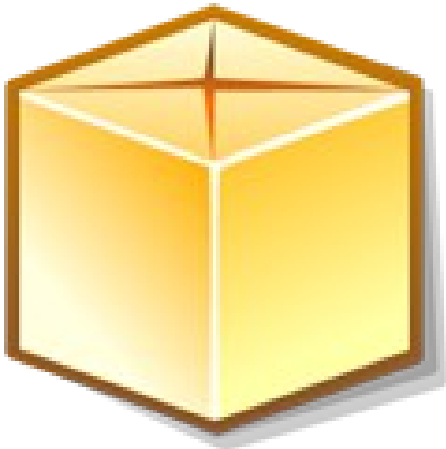
```
#####  
LUAEXPAT_TESTFILE=luaexpat/src/lxplib.o  
LuaExpat-fetch: luaexpat  
luaexpat:  
    cvs $(CVS_LUAFORGE)/luaexpat export -r $(LUAEXPAT_TAG) luaexpat  
LuaExpat-build: Compat-build $(LUAEXPAT_TESTFILE)  
$(LUAEXPAT_TESTFILE): luaexpat  
    cd luaexpat && make \  
        COMPAT_DIR="..$(COMPAT_INCLUDEDIR)" \  
        LIB_OPTION="$(LIB_FLAG)" \  
        CFLAGS+="$(LUAEXPAT_FLAGS)" \  
        lib  
LuaExpat-install: LuaExpat-build  
    cd luaexpat && make \  
        LUA_LIBDIR="$(LUAEXPAT_INSTALL_DIR)/lib/lua/5.0" \  
        LUA_DIR="$(LUAEXPAT_INSTALL_DIR)/share/lua/5.0" \  
        install  
LuaExpat-clean:  
    cd luaexpat && make clean  
LuaExpat-klean:  
    rm -rf luaexpat  
  
#####  
LUAZIP_TESTFILE=luazip/src/luazip.o  
LuaZip-fetch: luazip  
luazip:  
    cvs $(CVS_LUAFORGE)/luazip export -r $(LUAZIP_TAG) luazip  
LuaZip-build: Compat-build $(LUAZIP_TESTFILE)  
$(LUAZIP_TESTFILE): luazip  
    cd luazip && make \  
        COMPAT_DIR="..$(COMPAT_INCLUDEDIR)" \  
        LIB_OPTION="$(LIB_FLAG)" \  
        CFLAGS+="$(LUAZIP_FLAGS)" \  
        lib  
LuaZip-install: LuaZip-build  
    cd luazip && make \  
        COMPAT_DIR="..$(COMPAT_INCLUDEDIR)" \  
        LUA_LIBDIR="$(LUAZIP_INSTALL_DIR)/lib/lua/5.0" \  
        install  
  
LuaZip-clean:  
    cd luazip && make clean  
  
LuaZip-klean:  
    rm -rf luazip  
  
#####  
MD5_TESTFILE=md5/src/md5.o  
MD5-fetch: md5  
md5:  
    cvs $(CVS_LUAFORGE)/md5 export -r $(MD5_TAG) md5  
MD5-build: Compat-build $(MD5_TESTFILE)  
$(MD5_TESTFILE): md5  
    cd md5 && make \  
        COMPAT_DIR="..$(COMPAT_INCLUDEDIR)" \  
        LIB_OPTION="$(LIB_FLAG)" \  
        CFLAGS+="$(MD5_FLAGS)"  
  
MD5-install: MD5-build  
    cd md5 && make \  
        LUA_LIBDIR="$(MD5_INSTALL_DIR)/lib/lua/5.0" \  
        LUA_DIR="$(MD5_INSTALL_DIR)/share/lua/5.0" \  
        install  
  
MD5-clean:  
    cd md5 && make clean  
  
MD5-klean:  
    rm -rf md5  
  
#####
```



# gerenciadores de módulos



CPAN,



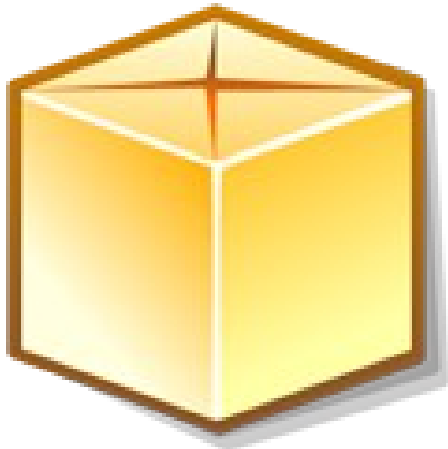
# gerenciadores de módulos



CPAN,



RubyGems,



# gerenciadores de módulos



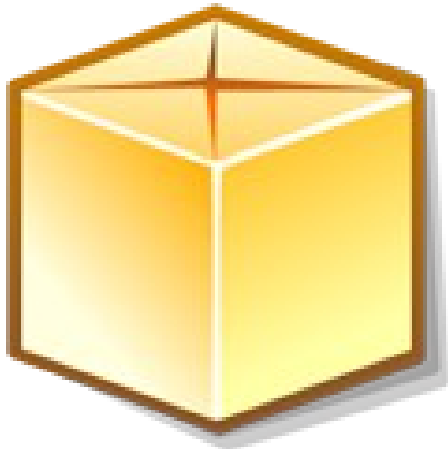
CPAN,



RubyGems,



PIP,



# gerenciadores de módulos



CPAN,



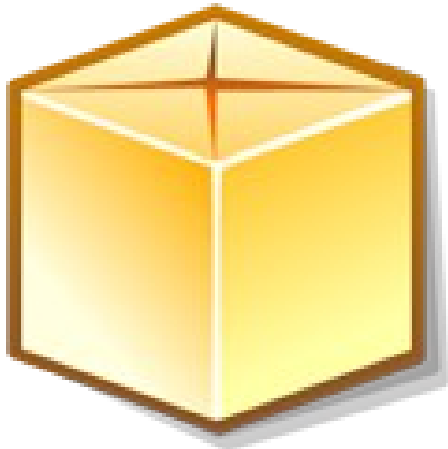
RubyGems,



PIP,



Cabal...



# gerenciadores de módulos



CPAN,



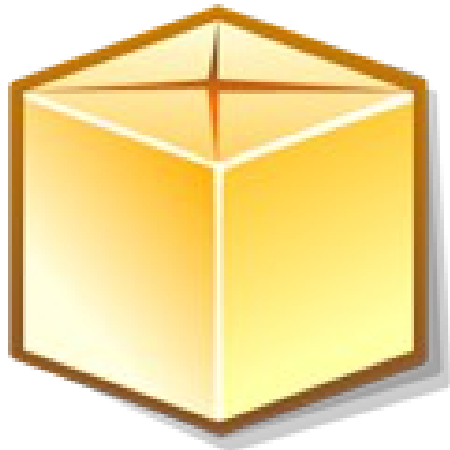
RubyGems,



PIP,

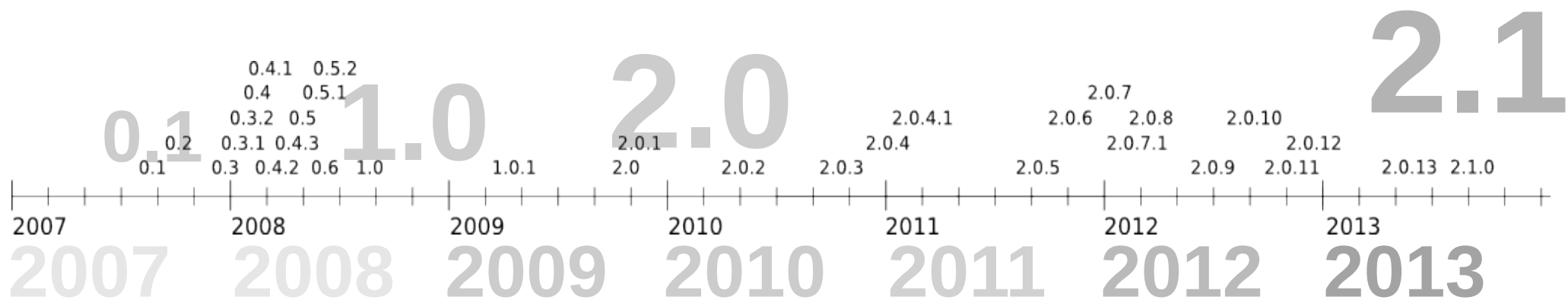


Cabal...



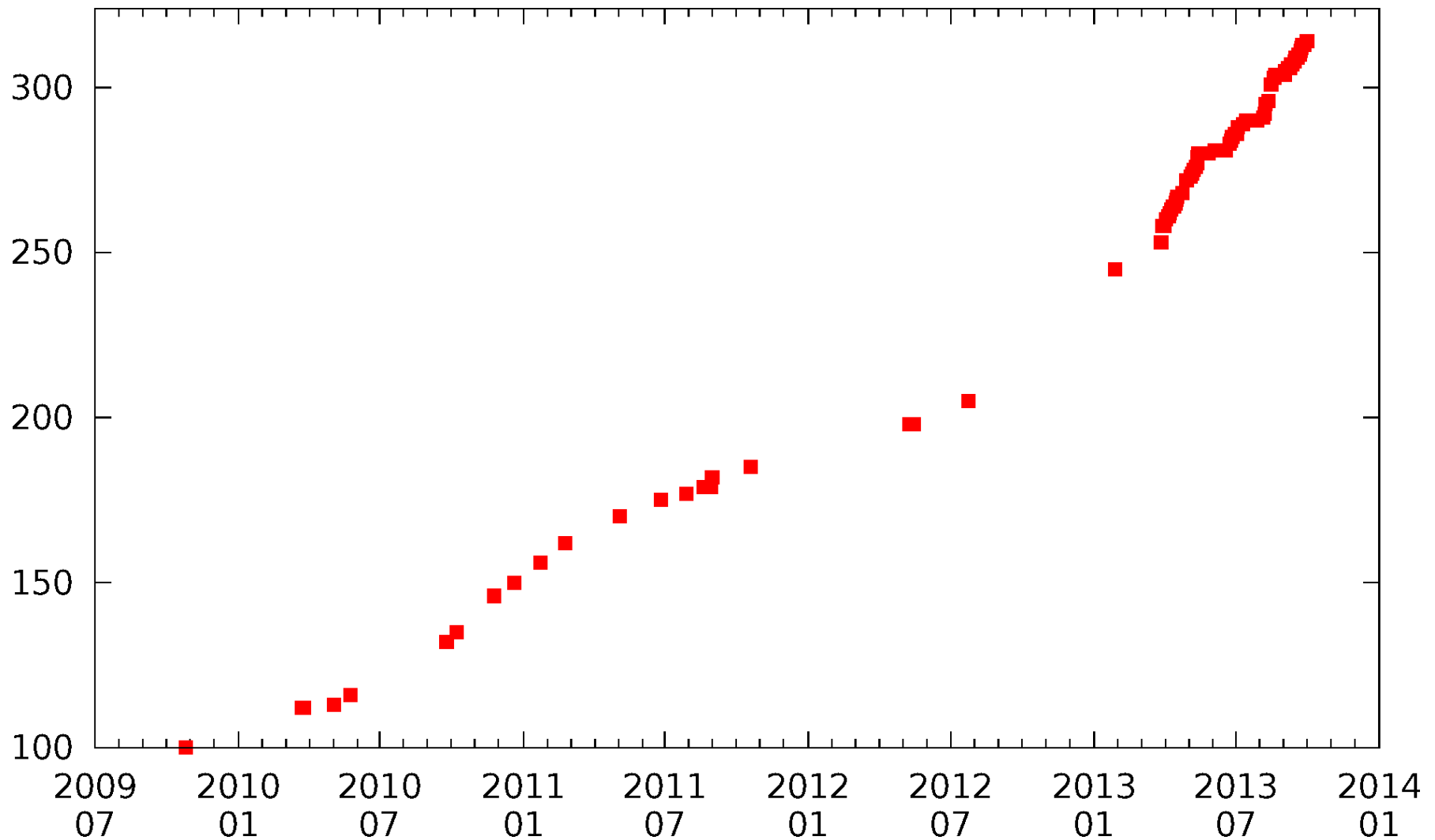
...LuaRocks!

# timeline do LuaRocks



<http://luarocks.org>

# repositório do LuaRocks



# Projetinhos

- [github.com/hishamhm](https://github.com/hishamhm)
  - luacov
  - lua-compatible-5.2
  - protosampler
  - ...





# dit 0.1!

```
Field_delete(saveAsField);
return saved;
}

int main(int argc, char** argv) {

    if (argc > 1) {
        if (String_eq(argv[1], "--version")) {
            printVersionFlag();
        }
    } else {
        fprintf(stderr, "Usage: dit <filename>\n");
        exit(0);
    }

    int quit = 0;

    struct stat st;
    stat(argv[1], &st);
    if (S_ISDIR(st.st_mode)) {
        fprintf(stderr, "dit: %s is a directory.\n", argv[1]);
        exit(0);
    }

Lin=80 Col=12 [*] dit.c
```

<http://hisham.hm/dit>

como começar?



# todo projeto começa assim

```
#include <stdio.h>
```

```
int main() {  
    /* partiu! */  
    return 0;  
}
```

# Obrigado!

- [h@hisham.hm](mailto:h@hisham.hm)
- [@hisham\\_hm](https://twitter.com/hisham_hm)
- <http://gobolinux.org>
- <http://luarocks.org>
- <http://hisham.hm/htop>
- <http://hisham.hm/dit>
- <http://github.com/hishamhm>