Going cross-platform

how htop was made portable

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About me

original author of htop, a project started in 2004

http://hisham.hm/htop/

lead developer of LuaRocks, the package manager for the Lua

http://luarocks.org/

co-founder of the GoboLinux distribution

http://gobolinux.org/
What is htop

an interactive process manager
intended to be “a better top”
   by this I originally meant: scrolling!

(versions of top improved a lot since!)
Hello, htop!
entire logic for gathering process data is based on the `/proc` filesystem

that's how `top` did it too, seemed right

UI was dependent only on the portable library `ncurses`

so far so good, for many years
users got htop running on FreeBSD using linprocfs (a Linux procfs emulation layer)
users sent patches and asked for minor tweaks for that scenario

happy to merge!
Backstory

« A wild Mac OS X fork appears! »

an ad-hoc port of htop 0.8.2

deleted all Linux-specific code

by the time I took note of it, the codebase had diverged
Fast-forward a few years

bug reports popping up in htop's bugtracker

old bugs, fixed in htop mainline for years!

it started to get annoying and look bad
A fundraiser

summer job: port it to Mac OS X “the right way” reached 1/3 of its goal

so I decided not to port it to the Mac, but to at least make htop portable
Making it portable

by this I mean making it amenable to be ported

so initially I didn't really port it

but I paved the way so that whoever did it, could do it cleanly
Breaking Linux dependency the easy way

try to compile it on another OS
set up a VM
first try: FreeBSD
gave up quickly
second try: PC-BSD
path of least resistance for a Linux user!
Approaches for multi-platform apps

separate codebases

sometimes it really makes sense: iOS vs. Android

a spaghetti of #ifdefs

sometimes it's the right thing to do

Clean interfaces (APIs) between portable and platform-specific parts
Isolated the Linux-specific code

Created two sub-directories

linux/

unsupported/
Isolated the Linux-specific code

Created two sub-directories

  linux/

  unsupported/

And, for fun

  freebsd/
An “00P” approach

Process.c
Process.h
ProcessList.c
ProcessList.h
...
linux/
    LinuxProcess.c
    LinuxProcessList.c
    ...

Date: 31/01/2016
Talk: Going cross-platform
Presenter: @hisham_hm
Upload to GitHub and...

unsupported/
linux/
freebsd/
Supported:

- unsupported/
- linux/
- freebsd/ - merged PRs!
**Talk:** Going cross-platform  
**Presenter:** @hisham_hm  

<table>
<thead>
<tr>
<th>PID</th>
<th>USER</th>
<th>PRI</th>
<th>NI</th>
<th>VIRT</th>
<th>RES</th>
<th>SHR</th>
<th>S</th>
<th>CPU%</th>
<th>MEM%</th>
<th>TIME+</th>
<th>Command</th>
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Upload to GitHub and...

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openbsd/
darwin/
Positive social impact

more, new contributors
always a good thing!
more diverse contributors
OpenBSD people and their security concerns!
anyone wants to port it to NetBSD?
...Cygwin!?
htop 2.0

The code is ready!

http://github.com/hishamhm/htop/

Packages reaching your repositories soon!
Thanks!

All fundraiser contributors!
David Hunt - Darwin support
Martin Misuth (etosan)
Christian Hesse (eworm-de)
Michael McConville (mmccco)
Michael Klein (mklein-de)
Kang-Che Sung (Explorer09)
and many others who sent in patches and bug reports!!