Porting to Moblin 2.0 and beyond

Rob Bradford


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How to port to Moblin 2.0.

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!

How to plan for portability.

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!

And some specific gotchas.

!

!

Moblin 2.0 Core is (GNOME Mobile)++

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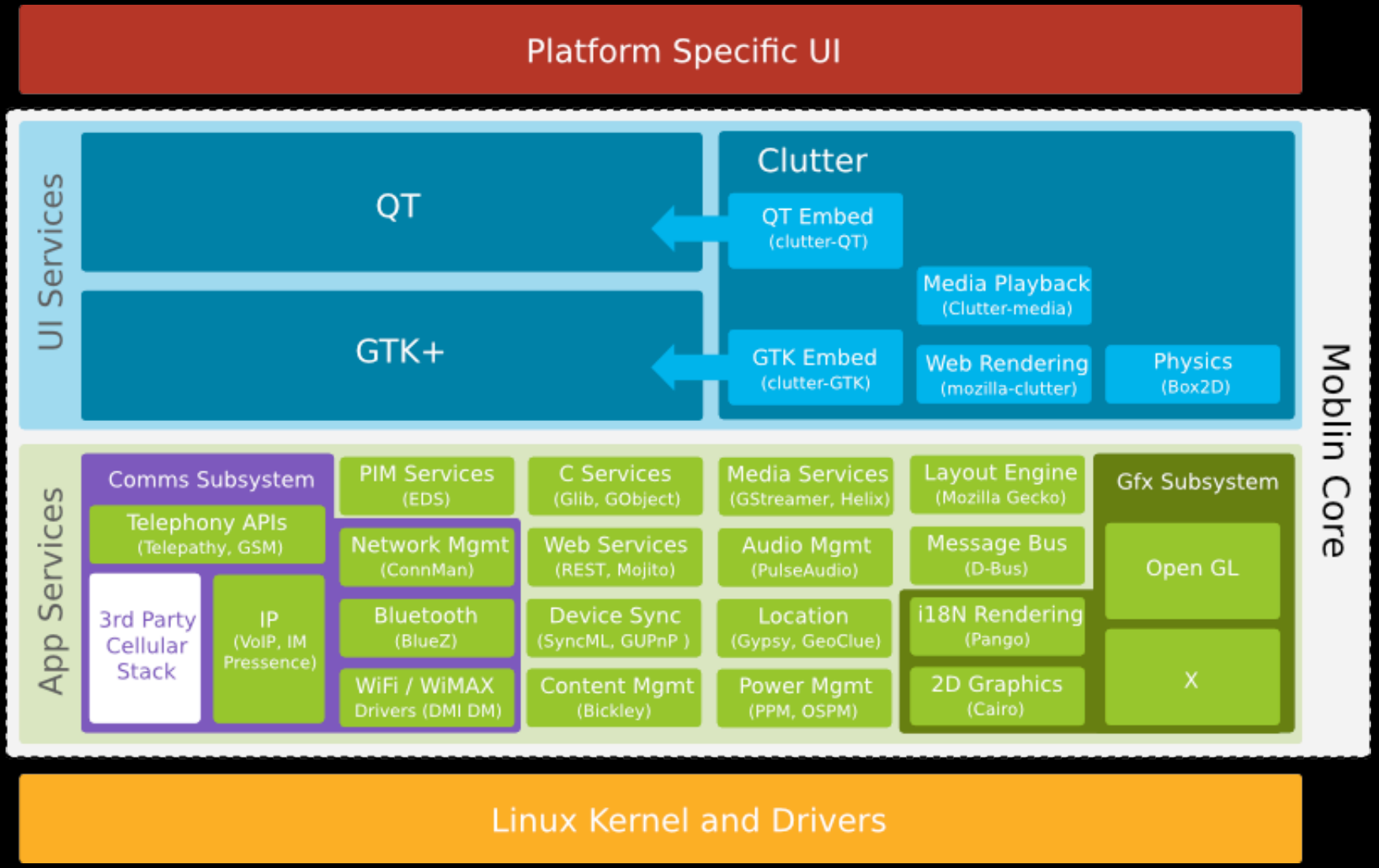
!


Platform Specific UI
UI Services
QT
GTK+
Clutter
QT Embed
(clutter-QT)
GTK Embed
(clutter-GTK)
Media Playback
(Clutter-media)
Web Rendering
(mozilla-clutter)
Physics
(Box2D)
Moblin Core
App Services
Comms Subsystem
Telephony APIs
(Telepathy, GSM)
3rd Party Cellular Stack
IP
(VoIP, IM Pressence)
PIM Services
(EDS)
Network Mgmt
(ConnMan)
Bluetooth
(BlueZ)
WiFi / WiMAX
Drivers (DMI DM)
C Services
(Glib, GObject)
Web Services
(REST, Mojito)
Device Sync
(SyncML, GUPnP)
Content Mgmt
(Bickley)
Media Services
(GStreamer, Helix)
Audio Mgmt
(PulseAudio)
Location
(Gypsy, GeoClue)
Power Mgmt
(PPM, OSPM)
Layout Engine
(Mozilla Gecko)
Message Bus
(D-Bus)
i18N Rendering
(Pango)
2D Graphics
(Cairo)
Gfx Subsystem
Open GL
X
Linux Kernel and Drivers

!

!

GNOME 2.26,
Clutter 1.0,
Xorg 7.5,
Kernel 2.6.29.

!

!

Anticipate the tip.
(At least the next stable release.)

CC-BY-SA “ballpen macro” by nick kulas from Flickr

Hildon → Core GNOME technologies

Orbit → DBUS

Modern, standards compliant desktop apps are …

!

!

...95% of the way to being Moblin apps.

!

!

Bonus technologies

- Bickley – media management,
- Mojito - “social” web services integration,
- GUPnP – Universal Plug 'n' Play
- GeoClue / Gypsy – location services

!

!

So you want to build an application for ...

!

!

CC-BY “Acer Aspire One Unboxing 11” by wstryder from Flickr

CC-BY “Ford Mustang on Felixstowe beach” by stevoarnold fro
Flickr

CC-BY “Get Me The Commisioner” by Joe Shabotnik from Flickr

CC-BY “Frigidaire electric refrigerator” by Frankie Roberto from Flickr

Try to be vertical agnostic.

!

!

Code for portability: use MVC, OOP and other TLAs.

!

!

80% should be generic, 20% should be specific.

!

!

UI design should be per vertical.

!

!

Touchscreen?
Touchpad/mouse?
Hardware buttons?
Voice?

!

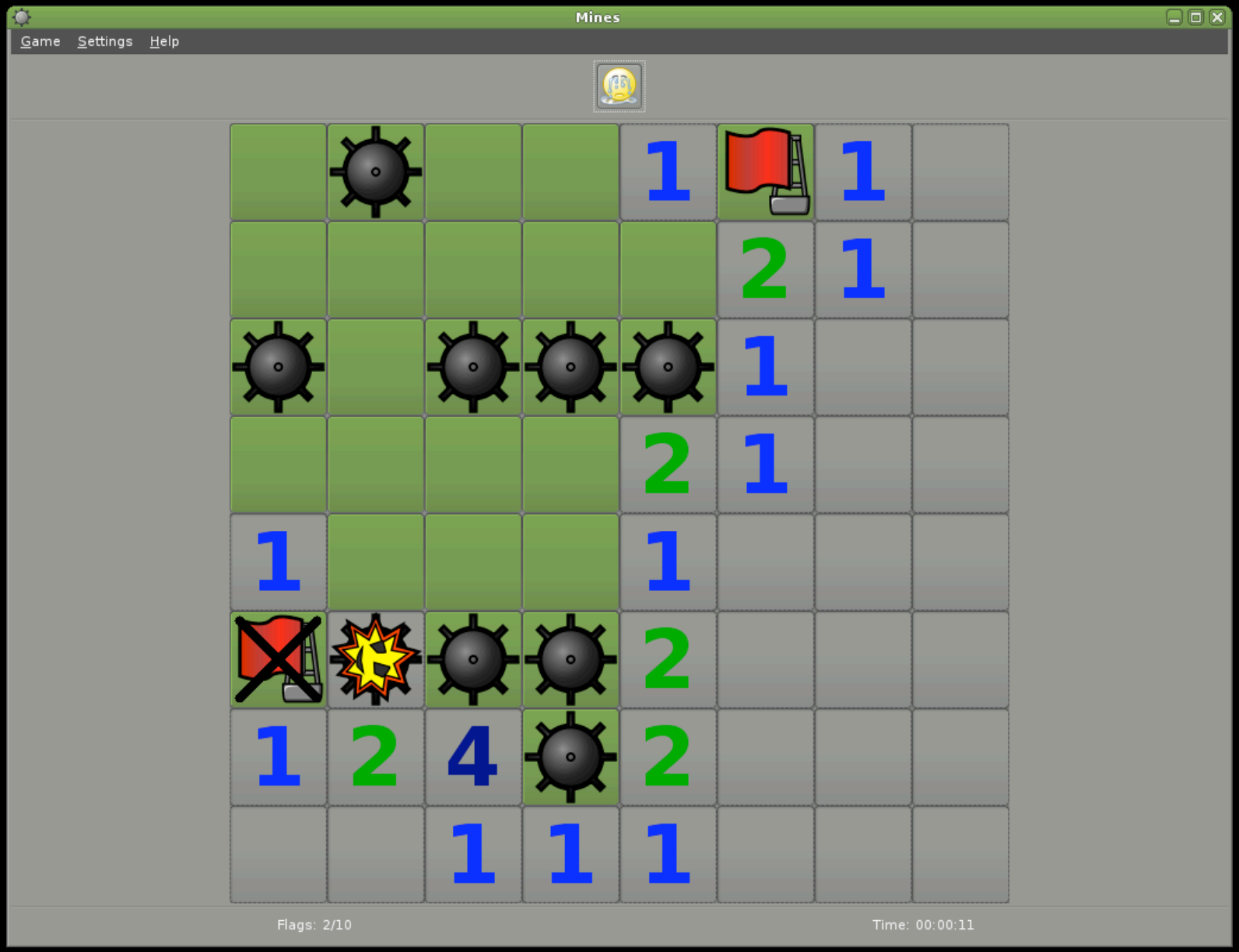
!

Compromise between accuracy and convenience.

!

!

Easily portable?



!

Gotchas:


Mines
Game
Settings
Help
Icon too small
Wasted space
Right click
Flags: 2/10
Time: 00:00:11

!

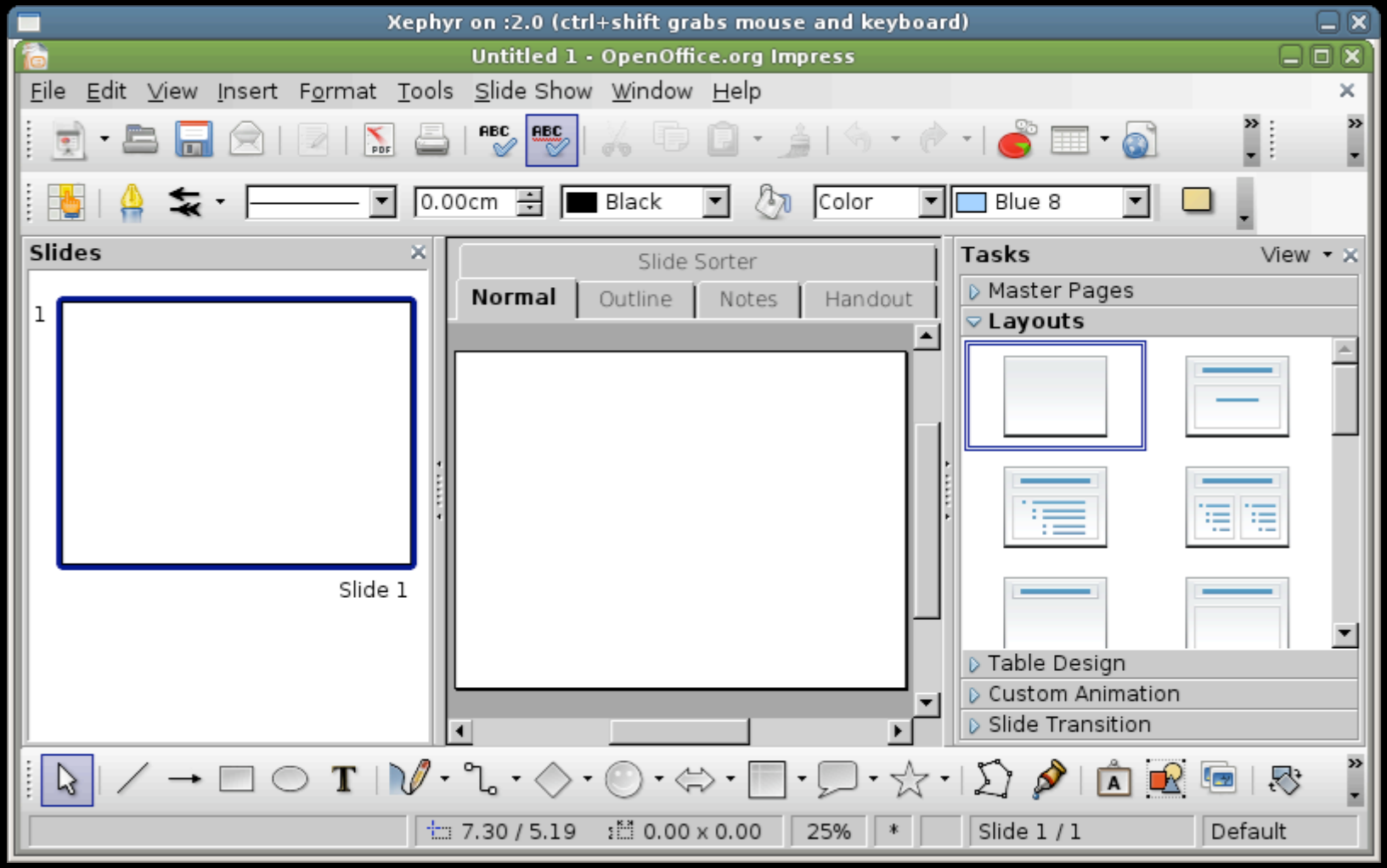

Output
CC-BY “Old Television” by Beige Alert from Flickr

Screen size?
Resolution?
Clarity?

!

!

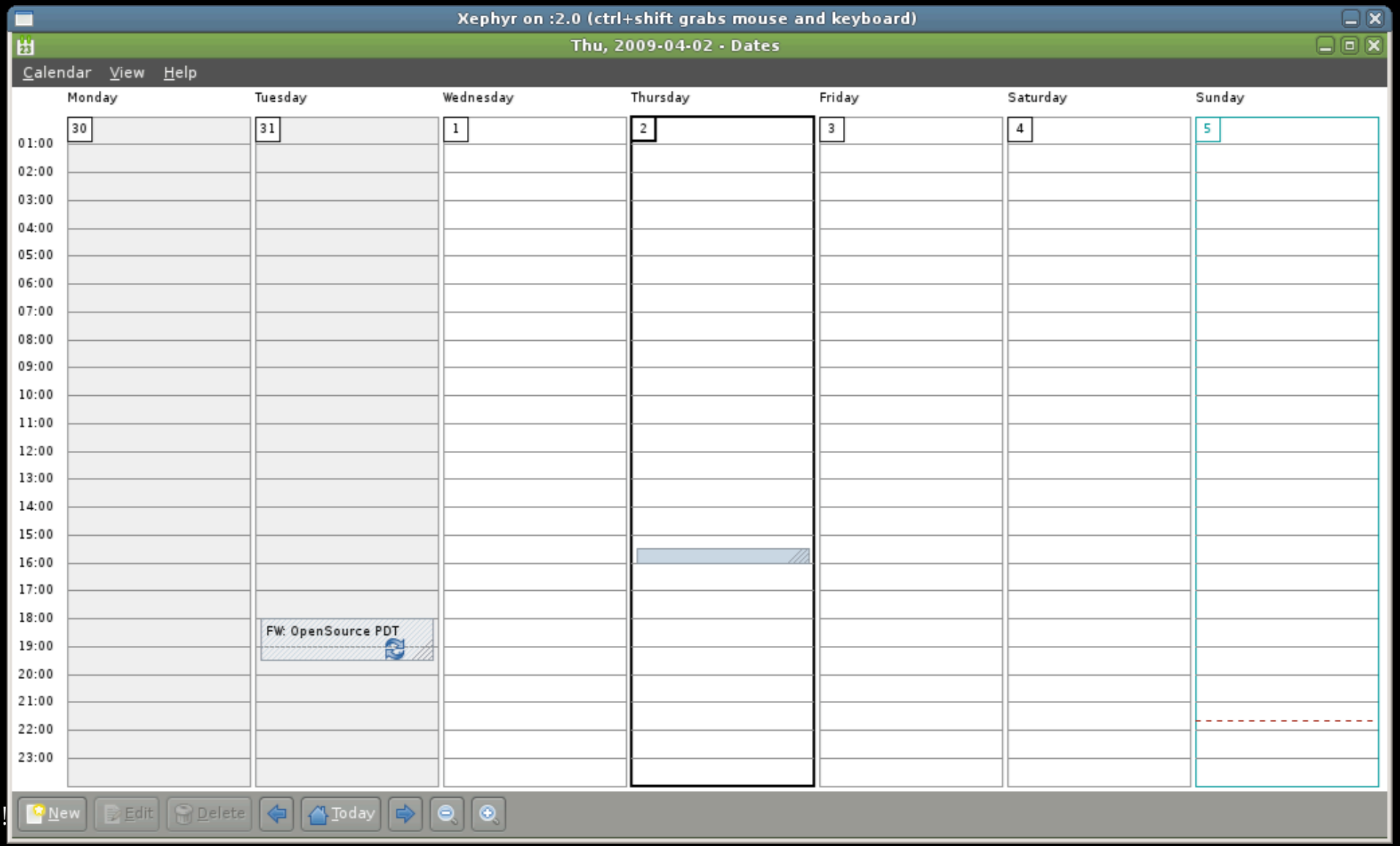
Impress at 800x480



!

!

Dates at 1024x800



Desktop UIs perform poorly at MID sizes …

!

!

… MID/phone Uis perform badly at netbook sizes…

!

!

Fast boot

!

!

Think hard about whether you need that...

!

!

init script?
autostarted service?
(DBUS activated doodah?)

!

!

… you probably don't.

!

!

Check with a bootchart.

!

!

CC-BY-SA “Light bulb” by akeg from Flickr

Think carefully about power usage.

!

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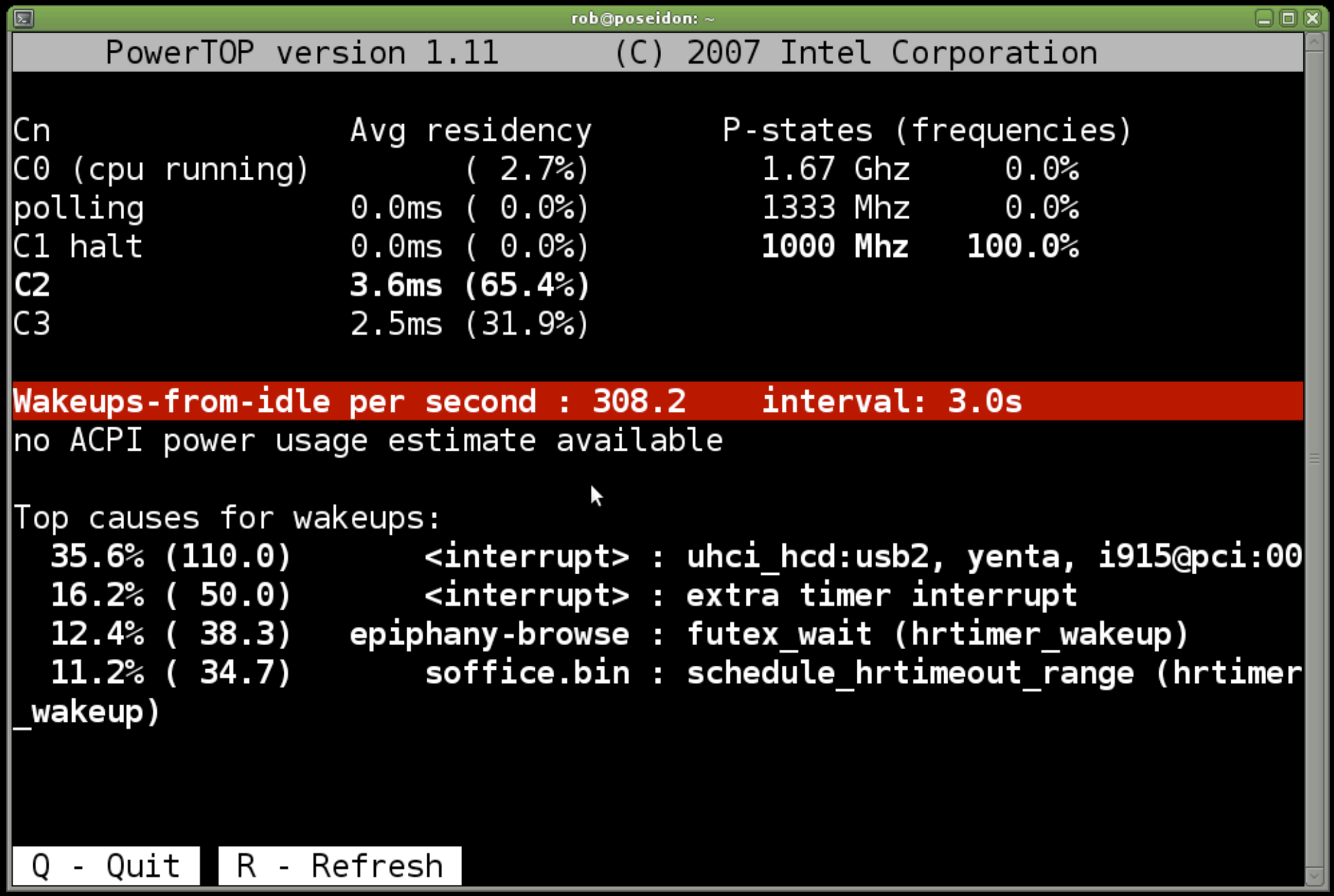
Avoid excessive wakeups.

!

!

Powertop:


rob@poseidon: ~
PowerTOP version 1.11 (C) 2007 Intel Corporation
Cn Avg residency P-states (frequencies)
C0 (cpu running) (2.7%) 1.67 Ghz 0.0%
polling 0.0ms (0.0%) 1333 Mhz 0.0%
C1 halt 0.0ms (0.0%) 1000 Mhz 100.0%
C2 3.6ms (65.4%)
C3 2.5ms (31.9%)
Wakeups-from-idle per second : 308.2 interval: 3.0s
no ACPI power usage estimate available
Top causes for wakeups:
35.6% (110.0) <interrupt> : uhci_hcd:usb2, yenta, i915@pci:00
16.2% (50.0) <interrupt> : extra timer interrupt
12.4% (38.3) epiphany-browse : futex_wait (hrtimer_wakeup)
11.2% (34.7) soffice.bin : schedule_hrtimeout_range (hrtimer
_wakeup)
Q - Quit
R - Refresh

Questions?