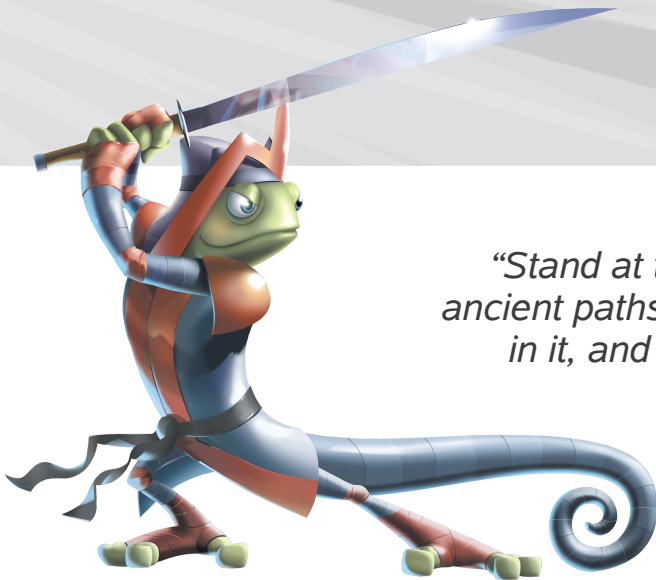


Moblin – the GUI for netbooks that rocks ...

August 2009

Michael Meeks

michael.meeks@novell.com



“Stand at the crossroads and look; ask for the ancient paths, ask where the good way is, and walk in it, and you will find rest for your souls...” - Jeremiah 6:16

Novell®

Overview

- Linux on Netbook Hardware
 - Why things should work out of the box
 - Why netbook hardware is nicer
- The three meanings of Moblin
- Moblin desktop GUI
 - overall architecture
 - Boot performance
 - GUI pieces
 - Demos
- The future

Linux on Netbook hardware ...

Drivers; the issue ?

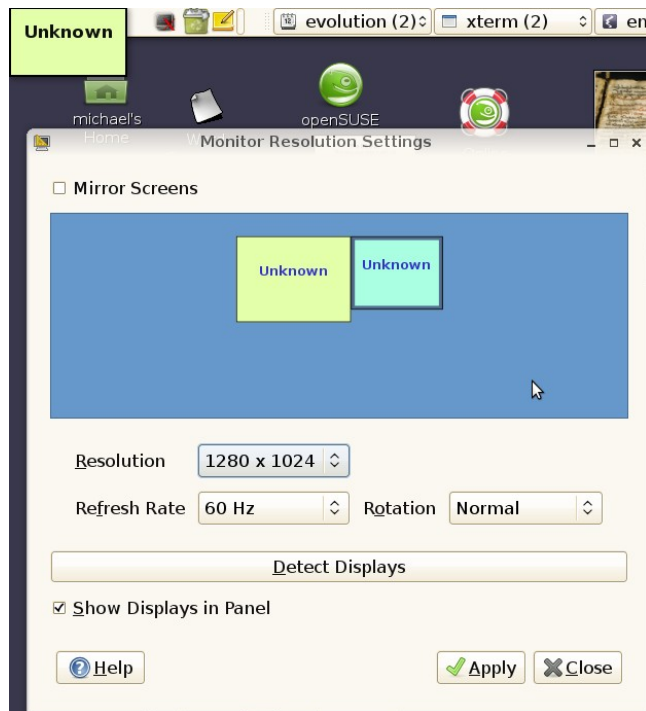
- “Linux supports more devices 'out of the box', than any other operating system ever has.” - GregKH
 - <http://linuxdriverproject.org/>
- But we can do better – when pre-loading with OEMs:
 - Loads of preloads at the moment
 - OEMs beating a path to our door, instead of vv.
 - Intel Atom based platforms: make life much easier: homogeneity

Sometimes it's just knowing you need a new driver:



Xorg improvements

- The following applies mostly (or only) to Free Software drivers – they have the features & work ...
- New Xorg: KMS + GEM + DRI2 + UXA + fbconsole + ...
- Intel doing an excellent job here; ATI doing well – nvidia – have no idea.



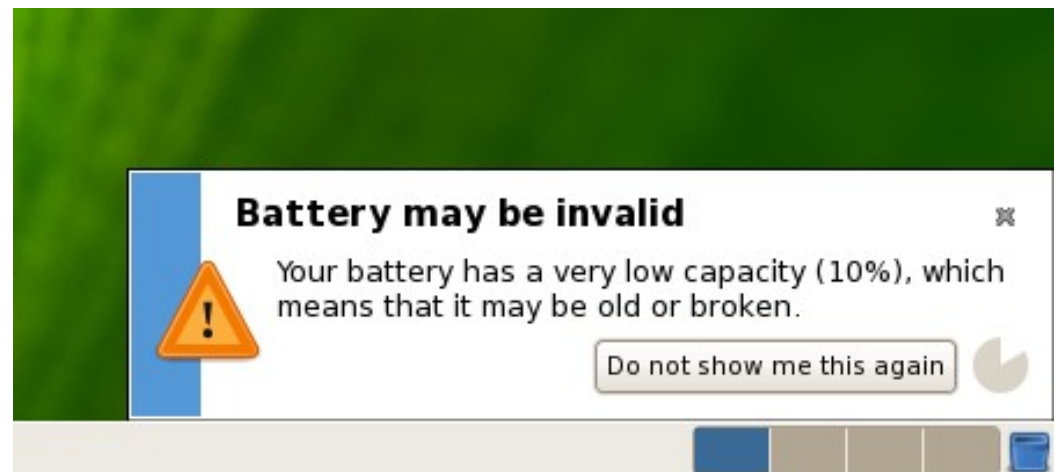
Power management work

- Power Management

- CPU – ACPI P & C states, race-to-idle, application fixing, *powertop*, throttling when on battery
 - > synchronize those blinking cursors ..
- Let devices get more rest:
 - > Wireless, SATA link, Sound cards, misc. USB devices
- Some big wins over the last few years ...

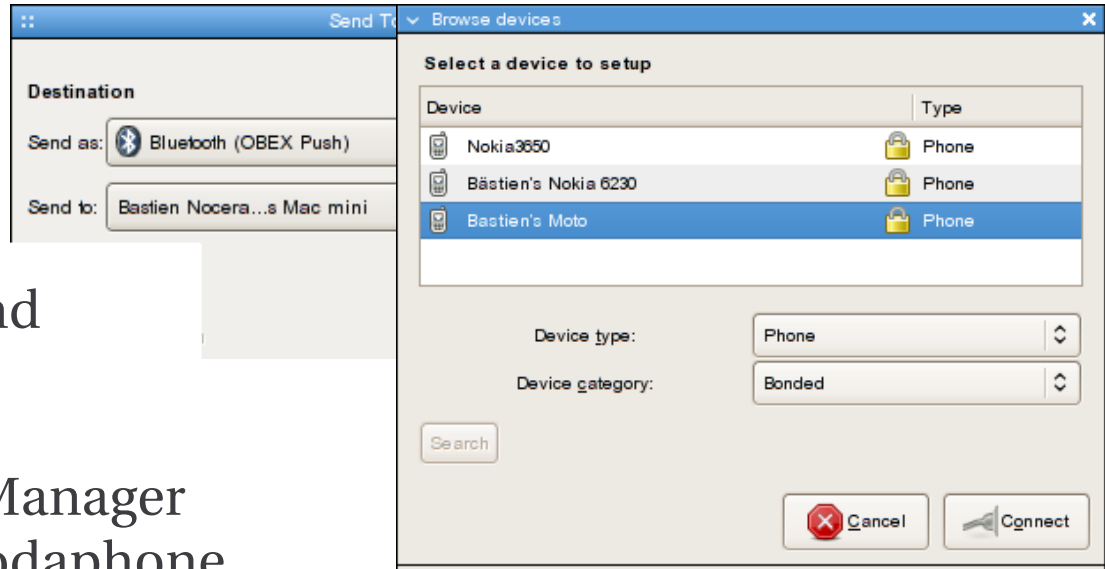
- Battery status

- When all else fails and your battery dies:
- Knows about some recalled models.



Laptop improvements #3

- Bluetooth
 - Certified 2.1 stack
 - Input, printer, sound
- Network Manager
 - 3G Cards; ModemManager unified interface Vodaphone, Telefonica & DSL modems
 - Custom routing, cnx. Sharing
- Common to have a netbook:
 - 3G, WiFi, Ethernet, Bluetooth
 - WiMax – getting there.



What is Moblin ?

Moblin – what is it ?

- Created by Intel, now an open community project: <http://www.moblin.org>
- **Moblin** – three meanings for the price of one:
 - i. **A reference distribution** – showing what is possible, and leading development; hybrid of Upstream / Fedora / SUSE / Intel
 - ii. **A specification:** LSB++ - what can be called Moblin – eg. boots in 10 seconds (on fast SSD)
 - iii. A new & **innovative Netbook GUI** – built around Clutter, and on top of Gnome Mobile.

Moblin – where to get it ?

- <http://www.moblin.org>
 - development mailing lists
 - Image customization & build tooling (MIC)
 - **Or** – one of the OSVs building a derivative:
- http://en.opensuse.org/Moblin/Build_Service
 - OpenSUSE Build service – insanely cool
 - > Targets other distributions (incidentally) – an ideal place to package your project for openSUSE, Fedora & Ubuntu
 - > Web & command line interface
 - > builds ISO Images, locally and remotely using KIWI etc.

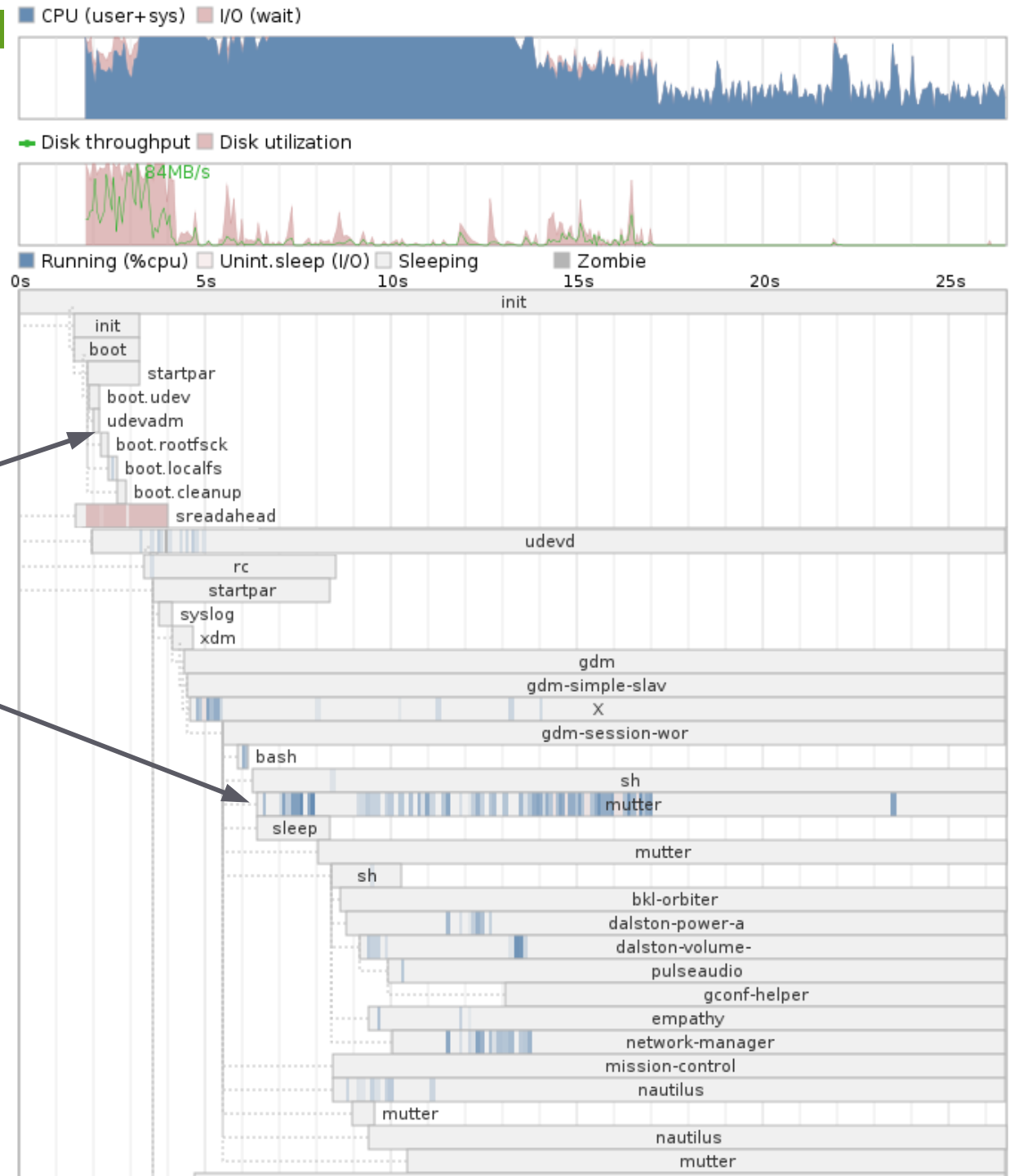
Boot time / performance bits

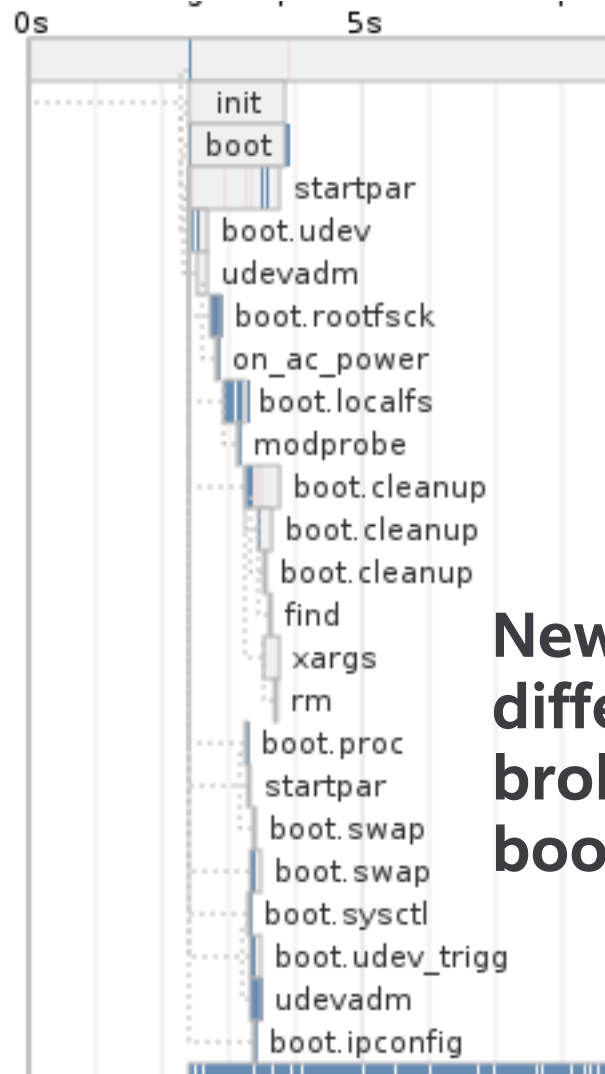
Boot performance ...

- Death by a thousand cuts ... *“deploy the band-aid!”*
- New & useful – kernel boot graphing:
 - Kernel params: `initcall_debug printk.time=1`
 - `dmesg | linux-git/scripts/bootgraph.pl`
- Existing boot-chart; rather lame
 - shell + Java monster => a shell + C + python monster !
 - using (horribly obscure) netlink taskstat interface – gives ns timings.
 - Better granularity, more accuracy, but still unfinished.
- Lots of sysprof usage
 - rather pretty, sampling full-stack profiler
 - Always profile [& *understand!*] before optimizing [*in the right place*]

Before:

- Poor granularity
- Processes appear to take no time, when we know they are busy: eg. boot.udev, udevadm
- Many processes appear to take no CPU time, even at startup
- Bootchart – it lies more than gdb !





New, and differently broken bootchart !



Moblin GUI

Architectural approximation ...

Moblin Netbook User Interface

mutter-moblin, dalston, anerley,
mojito, hornsey, bognor-regis,
moblin-web-browser, ...

Gnome Mobile stack: glib, gtk+,
GStreamer, pulseaudio, g-s-d, ...
plus nautilus, **mutter**, ...

NBTK, ccss
Clutter
Clutter-gst

Latest / greatest **X server** + Intel patches

D-Bus / HAL / udev / NM [or CM]

SysV init scripts – performance tuned

Latest up-stream: **linux**: no initrd

MyZone - the place to start ...

12:49 am
August 9, 2009

Appointments

- Sun Breakfast meeting with Jim
- Sun Core team call
- Sun Press Conference

Buy bigger USB key

Visit Computex 2009

Navigation icons: Home, People, Location, Music, Share, Groups, Settings, Search, Volume, etc.

Grid of content items:

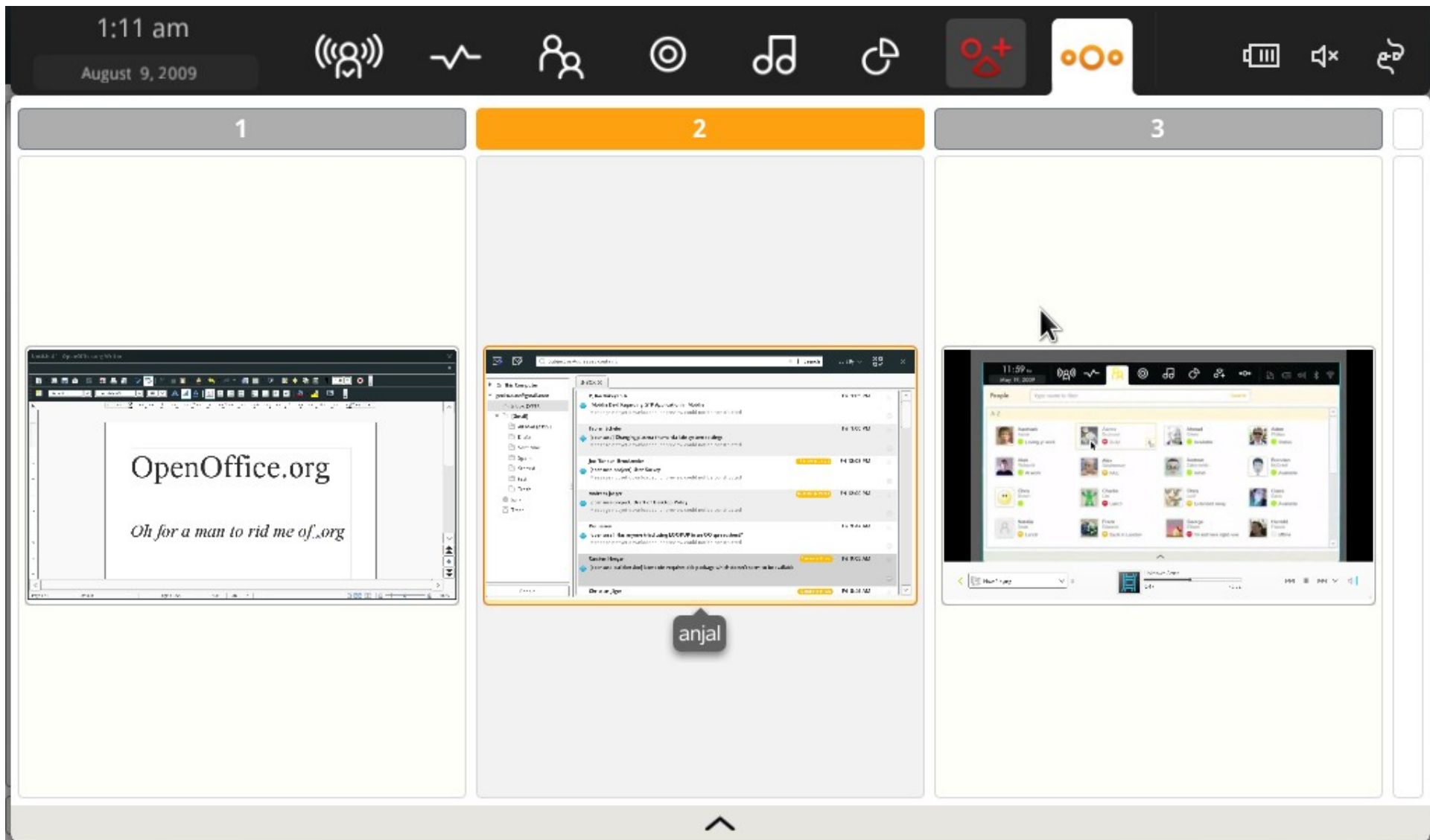
- Two men playing stringed instruments
- SEAN FOURNIER
- Stylized robot head
- Abstract colorful pattern
- Person sitting on a chair
- Floral pattern
- Person sitting on a chair
- AMBIENT PILLS UPDATE

Right sidebar notification: Your friends' feeds and web services will appear here. Activate your accounts now!

Web Services icon

Background: A large yellow and black stylized head sculpture.

Continuous partial fullscreen ...



Continuous partial fullscreen ...



The screenshot shows a mail client interface with a search bar at the top containing "Subject or Addresses contains" and a "Search" button. The left sidebar shows folders like "On This Computer", "gecko.suse@gmail.com", "Inbox (5117)", and "[Gmail]". The main area displays an "INBOX" with several email entries. A dialog box titled "Choose zone for application:" is overlaid on the interface, featuring three buttons: "Zone 1", "Zone 2" (highlighted in orange), and "New zone (0)". Below the buttons are three preview images: a window with a grid, a window with a code editor, and a blue abstract graphic. At the bottom left, a status bar shows an error message: "Error while Refreshing folder."

Subject or Addresses contains | Search | Sort By

On This Computer

gecko.suse@gmail.com

Inbox (5117)

[Gmail]

All Mail (2159)

Drafts

Sent Mail

Spam

Starred

test

Trash

Junk

Trash

People

INBOX

P, Karthikeyan A | Fri 1:05 PM

[Moblin Dev] Regarding GTK Application in Moblin

Fabian Scheler | Fri 1:00 PM

[opensuse] Changing plasma-theme via kde system settings

Joe "Zonker" ... | Fri 12:08 PM

[opensuse-p ...] 11 more in thread

Andreas Jaeg ... | Fri 12:00 PM

[opensuse-p ...] 89 more in thread

Per Jessen | Fri 9:47 AM

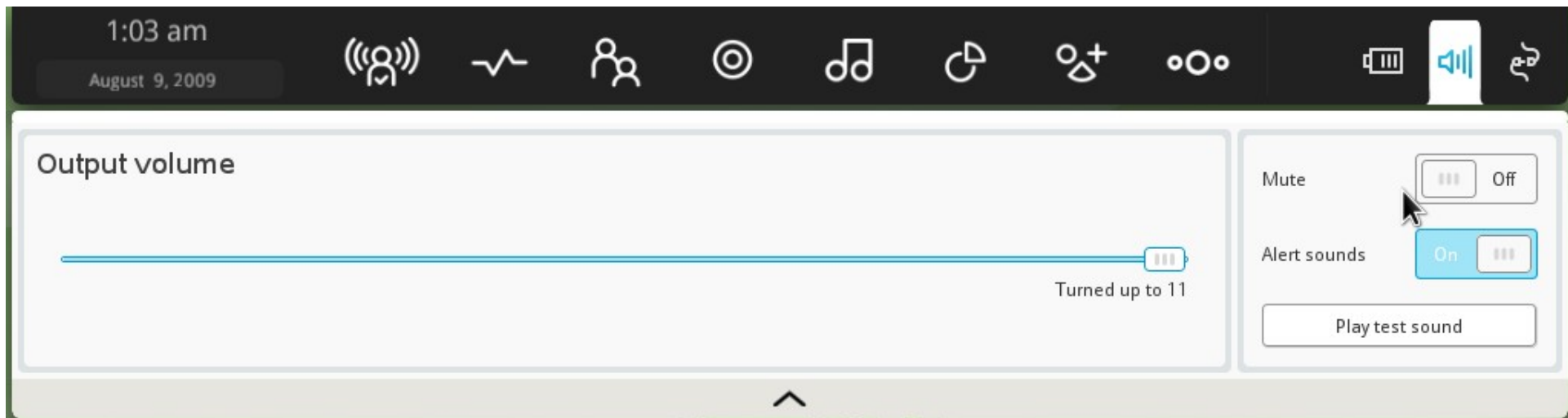
[opensuse] Has anyone tried using LOOKUP in an OO spreadsheet?

Carsten Hoeger | Fri 9:05 AM

[opensuse-buildservice] latest obs requires deb package which doesn't seem to be available

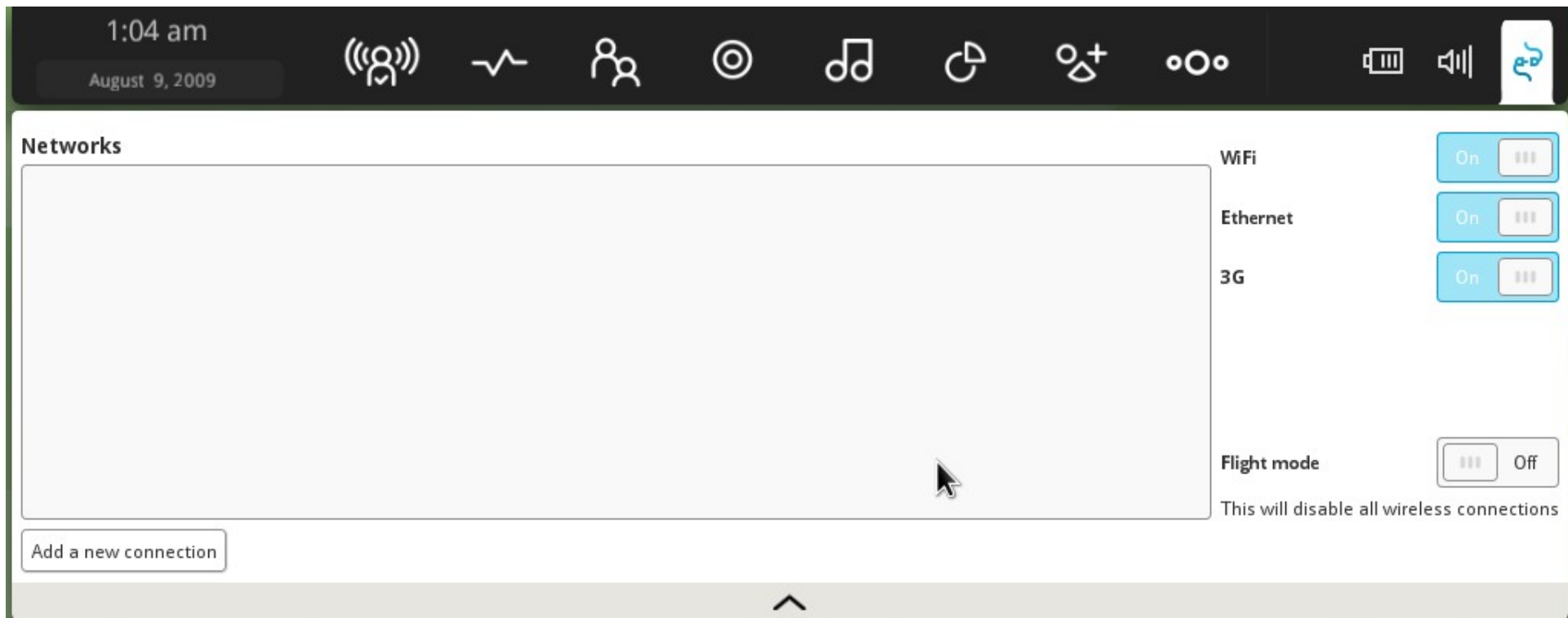
Error while Refreshing folder.

A few big systray applets ...



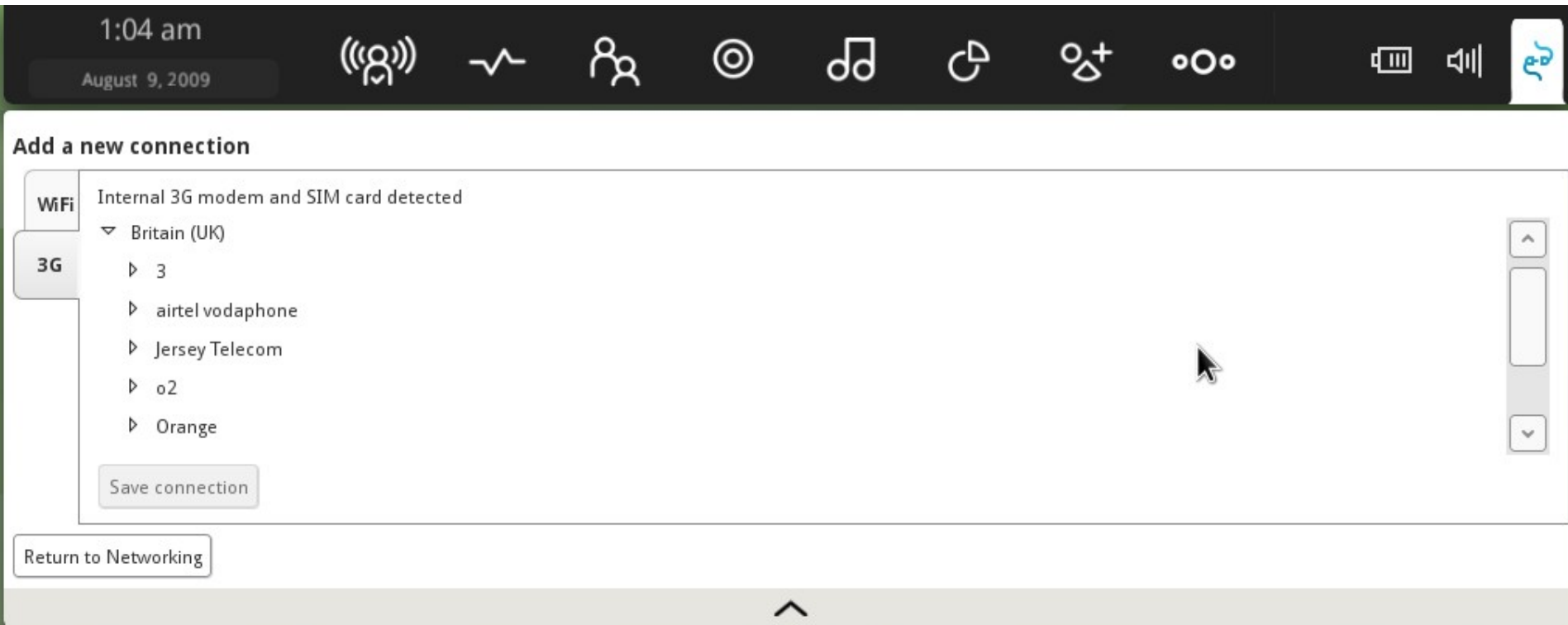
SUSE[®]
powered

Net-working ... (NM flavour)



SUSE
powered

Net-working ... (NM flavour) 3G



SUSE
powered

Novell.


Social networking / status panel ^{N.}

12:51 am
August 9, 2009

[[[User Icon]]] [Heart Rate Icon] [People Icon] [Target Icon] [Music Icon] [Share Icon] [Group Icon] [More Icon] [Volume Icon] [Mute Icon] [Language Icon]

Your current status - you are offline

To update your web status you need to setup a Web Services account with a provider that supports status messages

 Offline - Google Talk (gecko.suse@gmail.com) [+ Change](#)

> [Novell Icon] [Colorful Dots Icon] [Image Icon] [Image Icon] [Text Icon: 峪口水库, 帝堂水库, ...] [User Icon: Ahv86]

Social networking / settings

Web Services Settings



Set up your social networks to see new updates in myzone and the status panel.

▼ twitter

Twitter is a service for friends, family, and co-workers to communicate and stay connected through the exchange of quick, frequent answers to one simple question: What are you doing? [Launch site for more information.](#)

Username:

Password:

▶ last.fm

▶ Facebook

▼ MySpace

MySpace is a leading social portal for connecting people, content, and culture from around the world. Create a profile, share photos, professional and viral videos, blog, instant message your friends, and listen to music on the world's largest music community. [Launch site for more information.](#)

Status:

Log in pending



You'll need an account with MySpace and an Internet connection to use this web service.

E-mail prettiness – Anjal ...

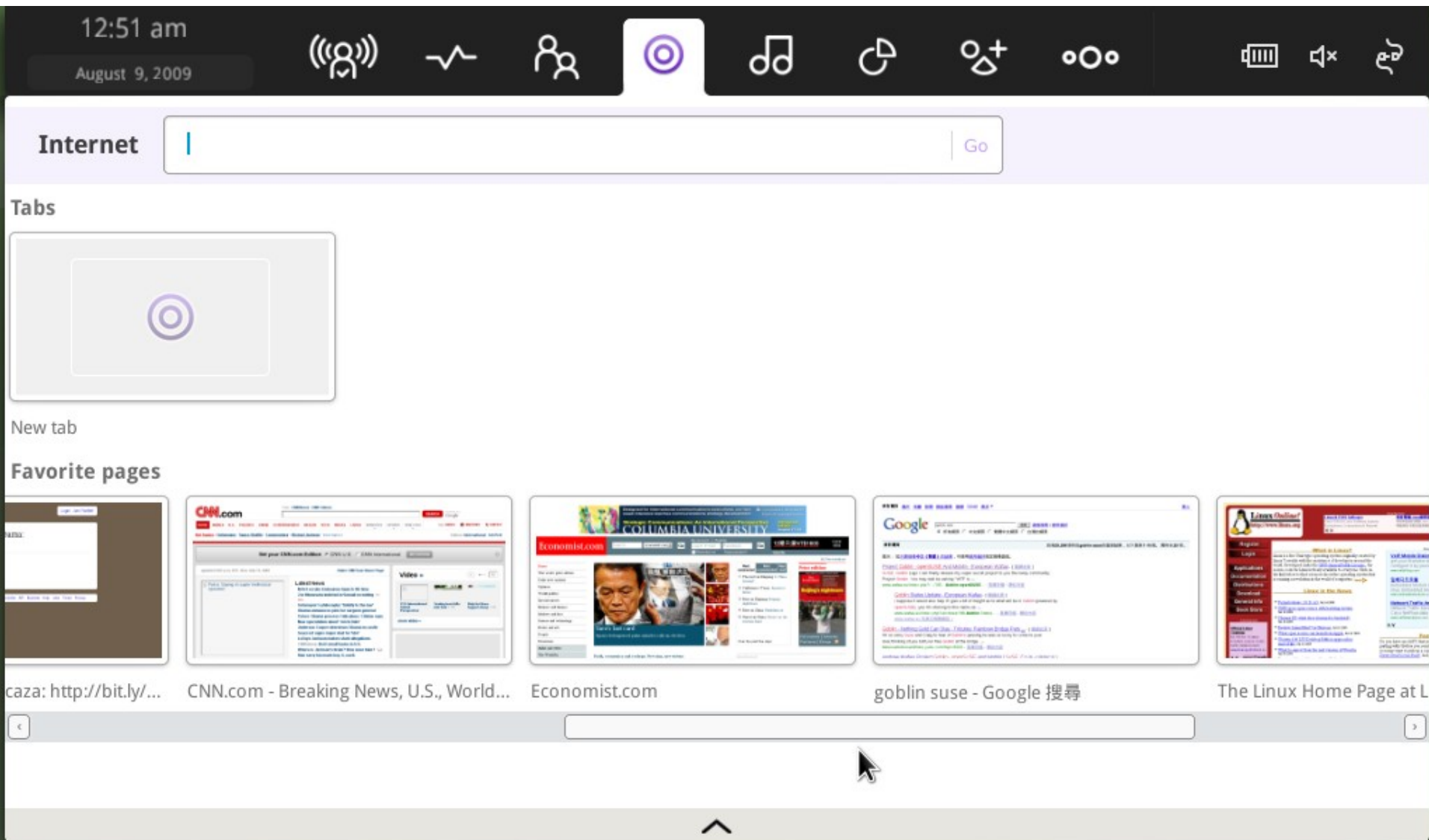
The screenshot shows a mail client interface with the following elements:

- Search Bar:** "Subject or Addresses contains" with a search icon and a close button.
- Sort By:** A dropdown menu for sorting options.
- Left Sidebar:**
 - On This Computer
 - gecko.suse@gmail.com
 - Inbox (5117)
 - [Gmail]
 - All Mail (2159)
 - Drafts
 - Sent Mail
 - Spam
 - Starred
 - test
 - Trash
 - Junk
 - Trash
- People

- INBOX:** A list of email entries with columns for sender, subject, and time.

Sender	Subject	Time	Thread Info
P, Karthikeyan A	[Moblin Dev] Regarding GTK Application in Moblin	Fri 1:05 PM	
Fabian Scheler	[opensuse] Changing plasma-theme via kde system settings	Fri 1:00 PM	
Joe 'Zonker' Brockmeier	[opensuse-project] User Survey	Fri 12:08 PM	11 more in thread
Andreas Jaeger	[opensuse-project] Draft of Desktop Policy	Fri 12:00 PM	89 more in thread
Per Jessen	[opensuse] Has anyone tried using LOOKUP in an OO spreadsheet?	Fri 9:47 AM	
Carsten Hoeger	[opensuse-buildservice] latest obs requires deb package which doesn't seem to be available	Fri 9:05 AM	1 more in thread
- Bottom Status Bar:** "Error while Retrieving message 7350." with a close button.

Funky web browser (panel) ...



Cubano - new banshee frontend

N.

↓ Repeat Off

Filter Results

All Artists (24)

- Angelic Unknown
- Celestial Aeon Project
- DeBoo
- Drunksouls
- F. JULIAN
- haroldo torrecilha
- Isolated Atoms
- Josh Woodward
- METISSE
- MISERY
- OPRACHINA
- Professor Kliq
- promising crew
- Revolution Void
- Sean Fournier
- Silence
- Slim

All Albums (30)

- 2 Days A Night
The Liquid Kitchen
- Aeon 3
Celestial Aeon Project
- Alter Ego
Xcyril
- Ambient Pills Update
Zeropage
- Combat Circus
Talco
- Dirty Wings
Josh Woodward
- Electronic Soundz Vo...
DeBoo

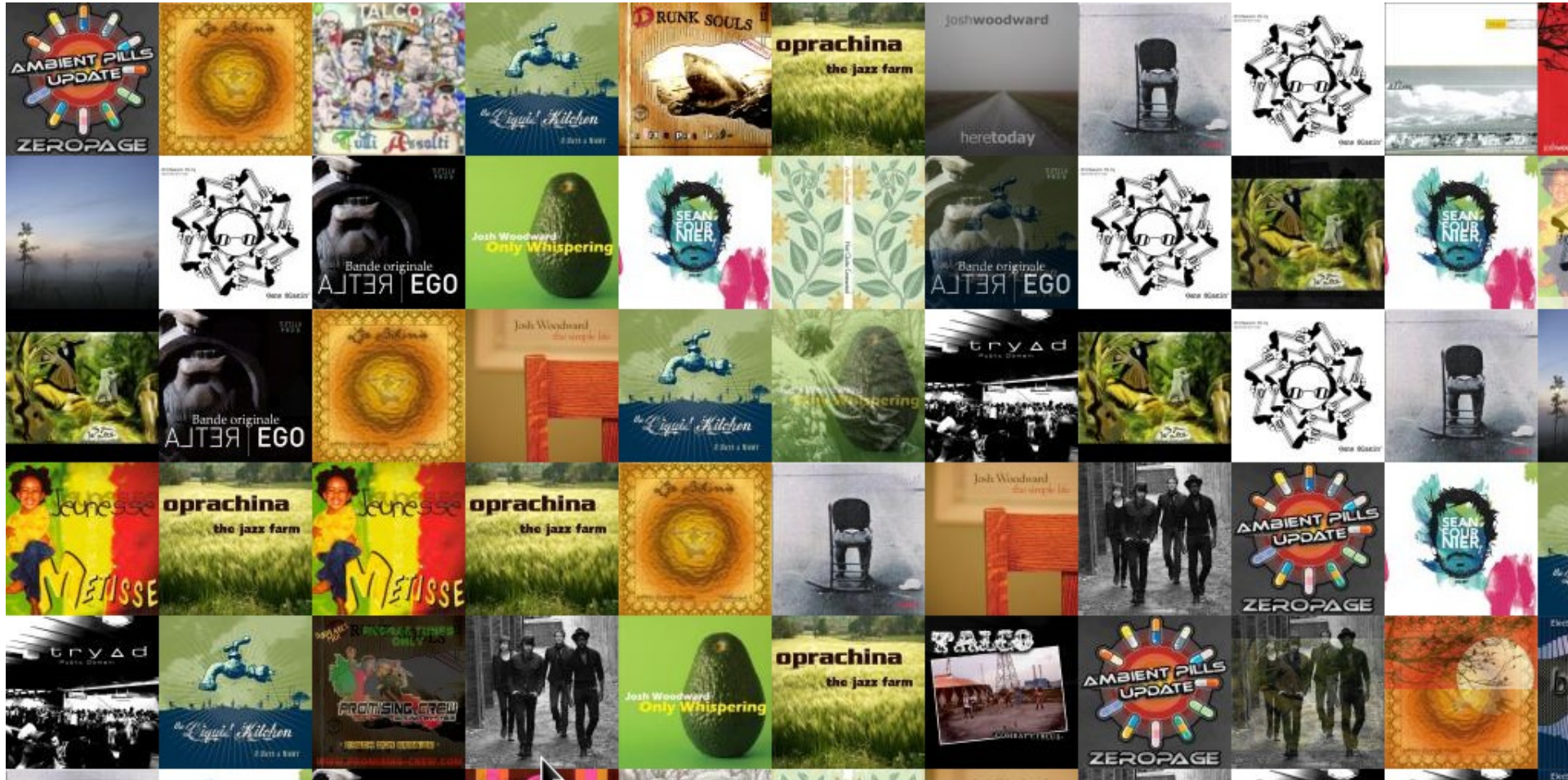
- 1 Forever Waltz
- 2 Gathering Storm
- 3 Summer Stroll
- 4 Angelic Choir
- 5 Lament for the innocent
- 1 Frozen Silence
- 2 I Will Come For You
- 3 Jester's Tear
- 4 Long Live the King
- 5 Lords of the Sky
- 6 MasqueradeE
- 7 Evening Falls
- 8 Fields of Tenerron
- 9 Atmosphere
- 10 Awakening
- 11 Caverns

Music Library 326

Journey To Eternia (Demo)

0:04 -0:01

Cubano - now-playing / clutter



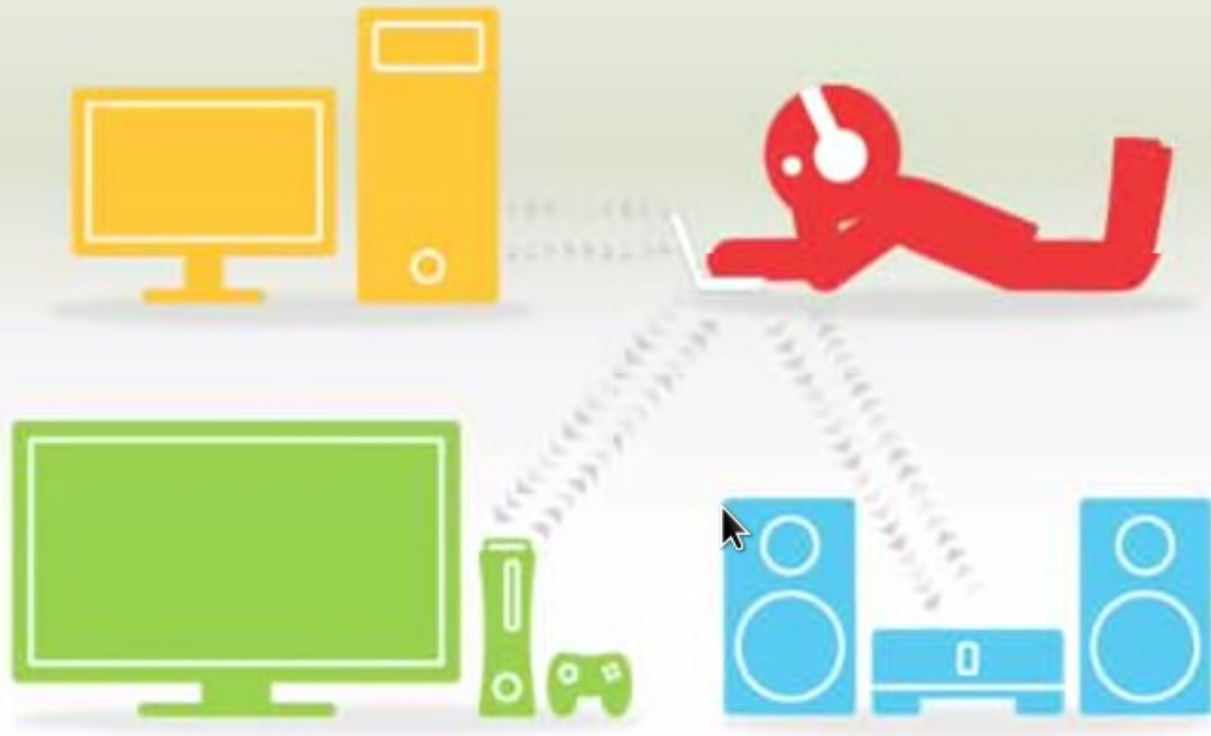
< Now Playing



Celestial Aeon Project

0:00 -0:05

Cubano - video (clutter) ...



Now Playing



Unknown Artist

1:16



-0:23



Conclusion / Q&A

- Linux on Netbooks hit a new dawn ...
 - And it just keeps on getting better ...
- Netbooks rock:
 - Keyboard you can type on, No proprietary app lock-in + ...
- Moblin is clean, beautiful, crisp, and scrunchy.
- Get involved:
 - <http://www.moblin.org/>
 - <http://en.opensuse.org/Moblin>
- Thanks – to all the people that did the work [not me]



N.

Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27