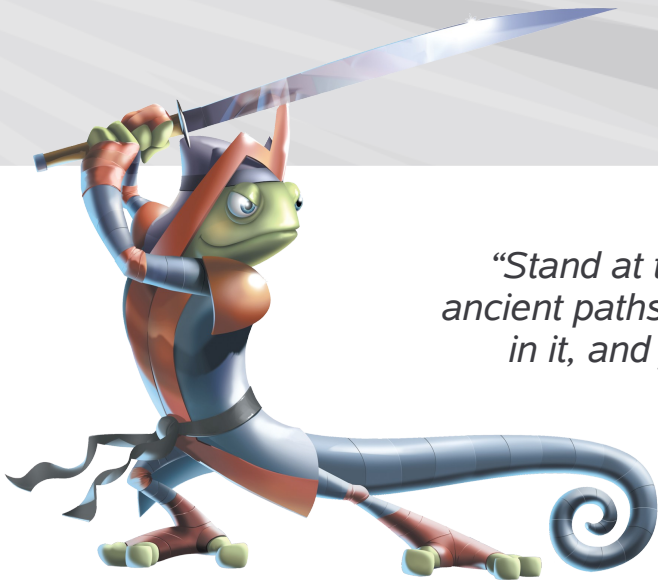


# Moblin – the GUI for netbooks that rocks ...

August 2009

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*“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 ?

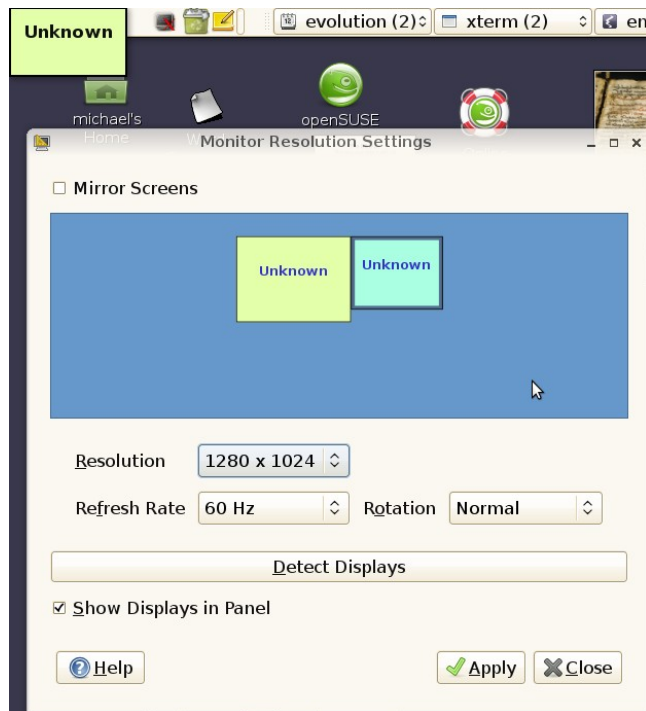
- “Linux supports more devices 'out of the box', than any other operating system ever has.” - GregKH
  - <http://linuxdriverproject.org/>
- But we can do better – when pre-loading with OEMs:
  - Loads of preloads at the moment
  - OEMs beating a path to our door, instead of vv.
  - Intel Atom based platforms: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

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



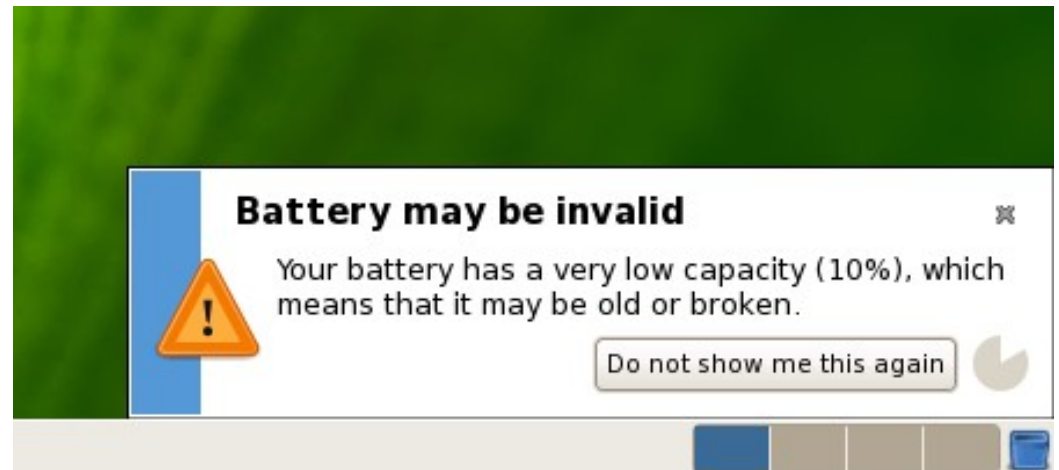
# Xorg improvements

- 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.



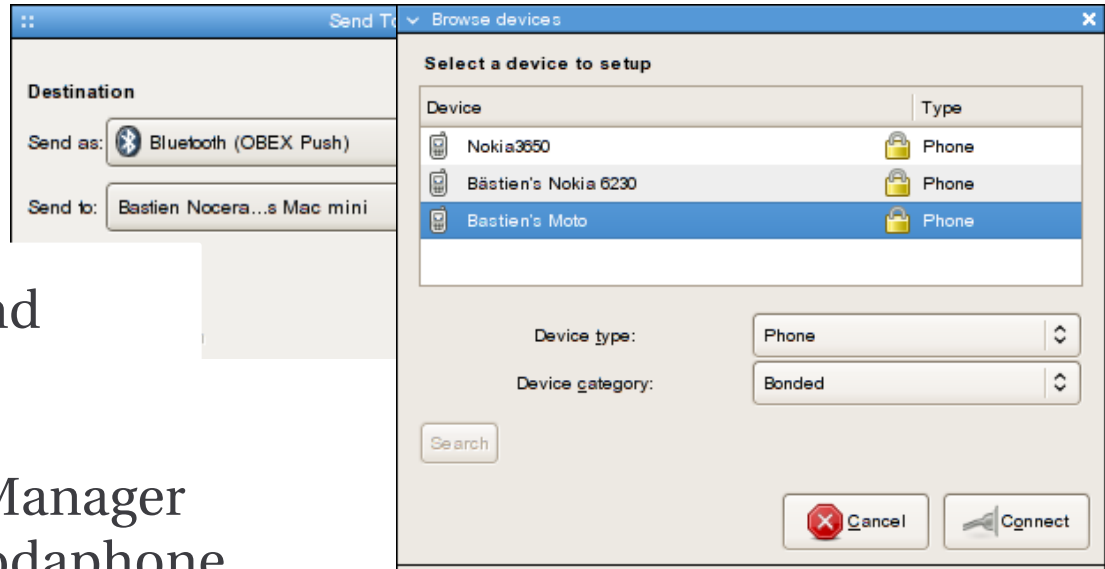
# Power management work

- 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](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.

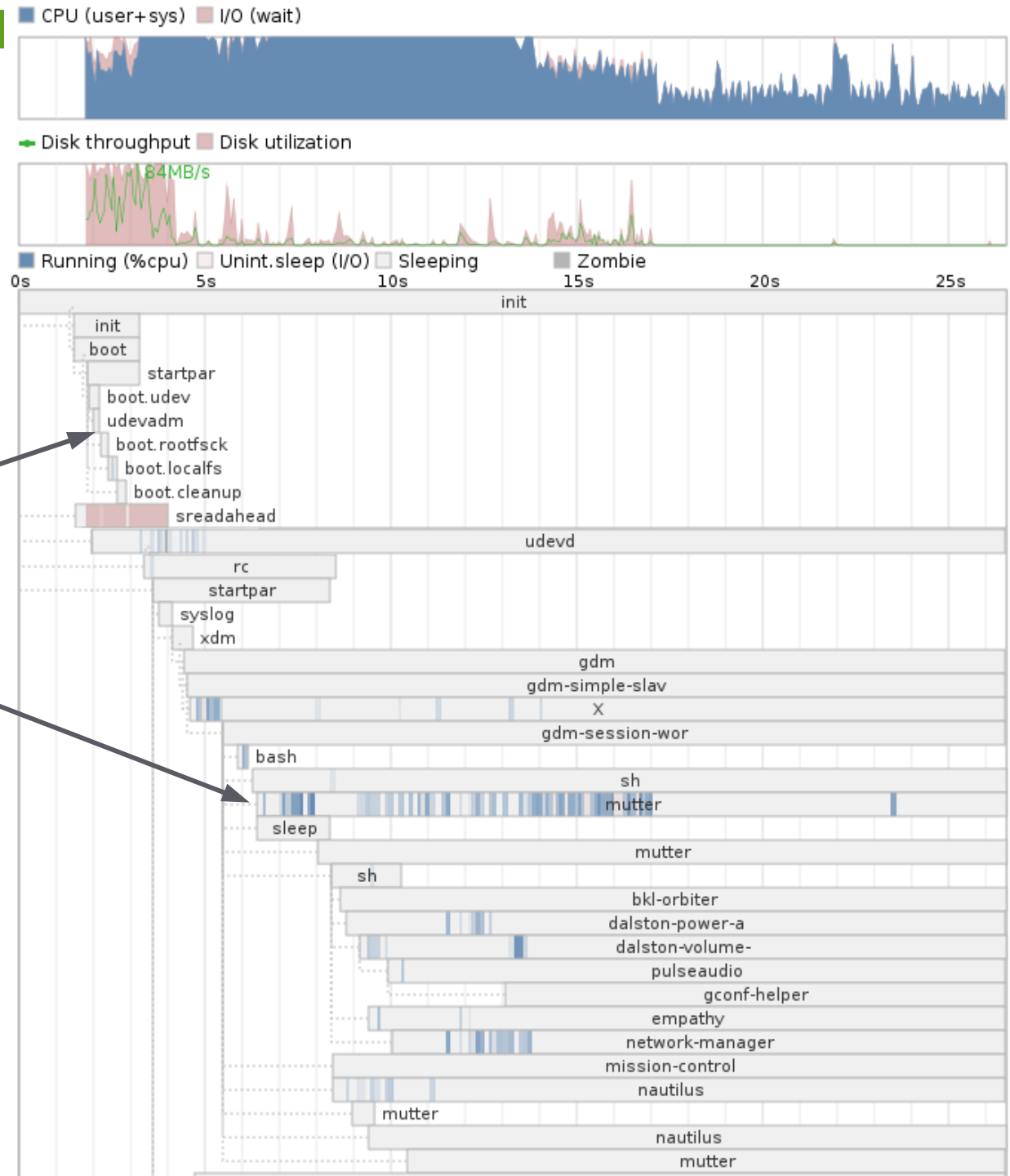
**Boot time / performance bits**

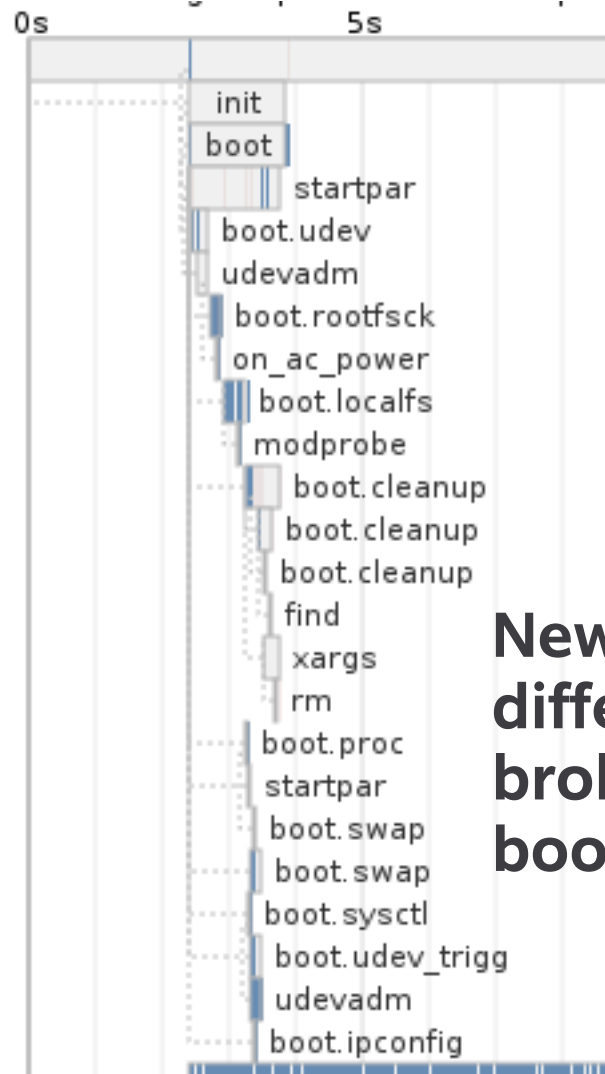
# Boot performance ...

- 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, etc.

Grid of content items:

- Two men playing stringed instruments
- SEAN FOURNIER album cover
- Stylized robot head with tools
- Abstract colorful geometric pattern
- Person sitting on a chair
- Book cover with green floral pattern
- Person sitting on a chair
- AMBIENT PILLS UPDATE graphic

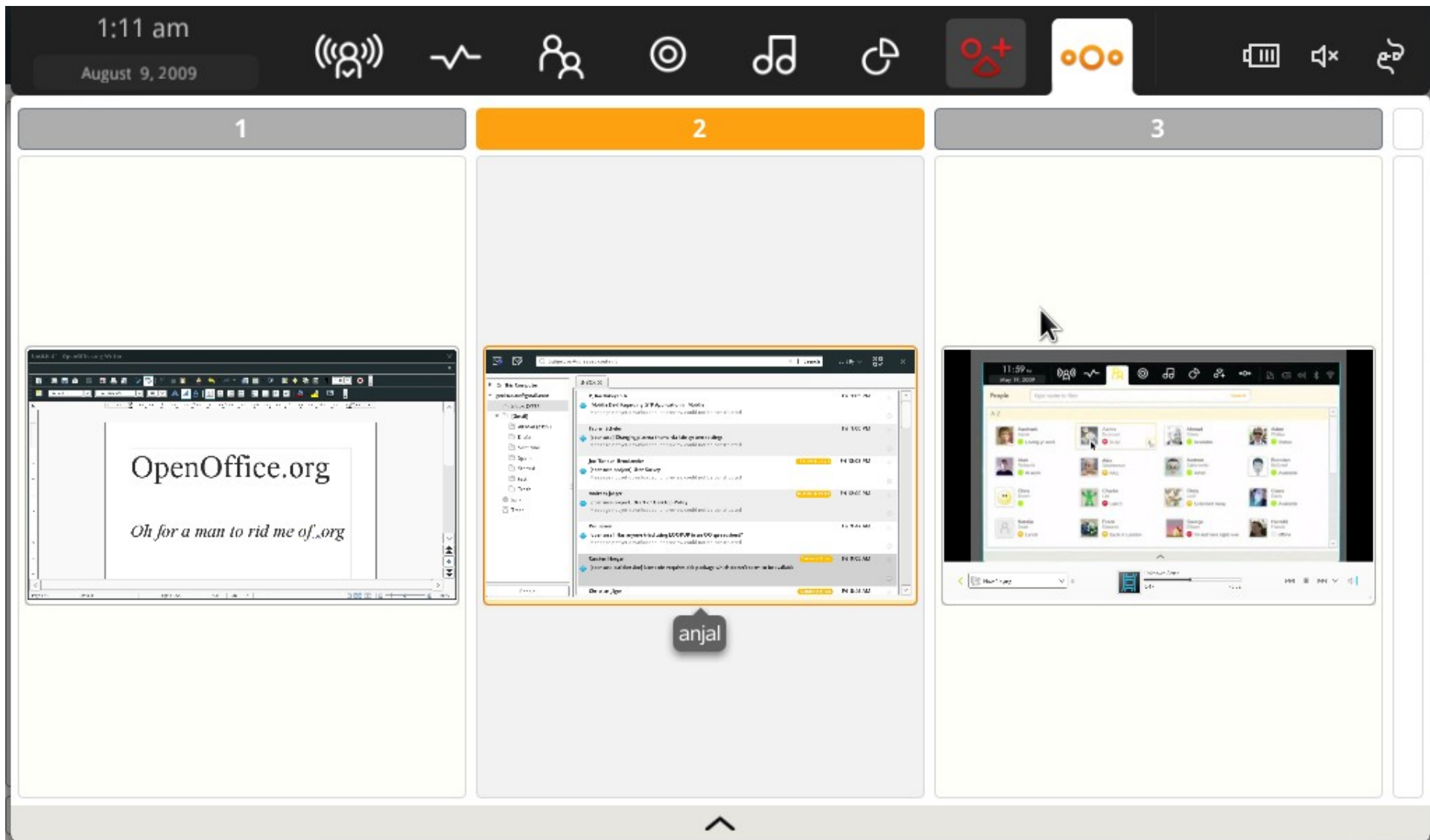
Right sidebar notification:

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

Web Services

Bottom navigation: Home arrow

# Continuous partial fullscreen ...



# Continuous partial fullscreen ...



The screenshot shows a KDE email client interface. The main window displays an inbox with several email entries. A dialog box titled "Choose zone for application:" is overlaid on the center of the screen. The dialog box contains three buttons: "Zone 1" (grey), "Zone 2" (orange), and "New zone (0)" (grey). Below the buttons are three preview images: a window with a grid, a window with a code editor, and a window with a blue background and a white shape. The email client interface includes a search bar at the top, a sidebar on the left with folders like "Inbox (5117)", "All Mail (2159)", "Drafts", "Sent Mail", "Spam", "Starred", "test", "Trash", "Junk", and "Trash", and a status bar at the bottom with an error message: "Error while Refreshing folder."

Subject or Addresses contains | Search | Sort By

INBOX x

P, Karthikeyan A Fri 1:05 PM  
[Moblin Dev] Regarding GTK Application in Moblin  
Message not yet downloaded or preview could not be constructed

Fabian Scheler Fri 1:00 PM  
[opensuse] Changing plasma-theme via kde system settings  
Message not yet downloaded or preview could not be constructed

Joe "Zonker" Fri 12:08 PM  
[opensuse-p] ...  
11 more in thread  
Message not yet downloaded or preview could not be constructed

Andreas Jaeg Fri 12:00 PM  
[opensuse-p] ...  
89 more in thread  
Message not yet downloaded or preview could not be constructed

Per Jessen Fri 9:47 AM  
[opensuse] Has anyone tried using LOOKUP in an OO spreadsheet?  
Message not yet downloaded or preview could not be constructed

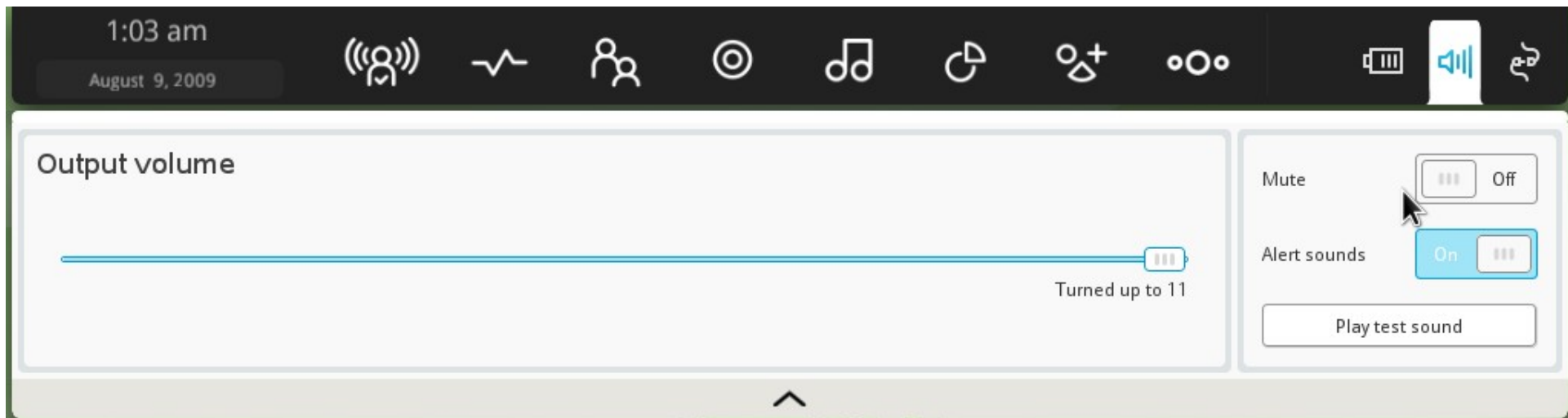
Carsten Hoeger Fri 9:05 AM  
[opensuse-buildservice] latest obs requires deb package which doesn't seem to be available  
1 more in thread  
Message not yet downloaded or preview could not be constructed

Choose zone for application:

Zone 1 Zone 2 New zone (0)

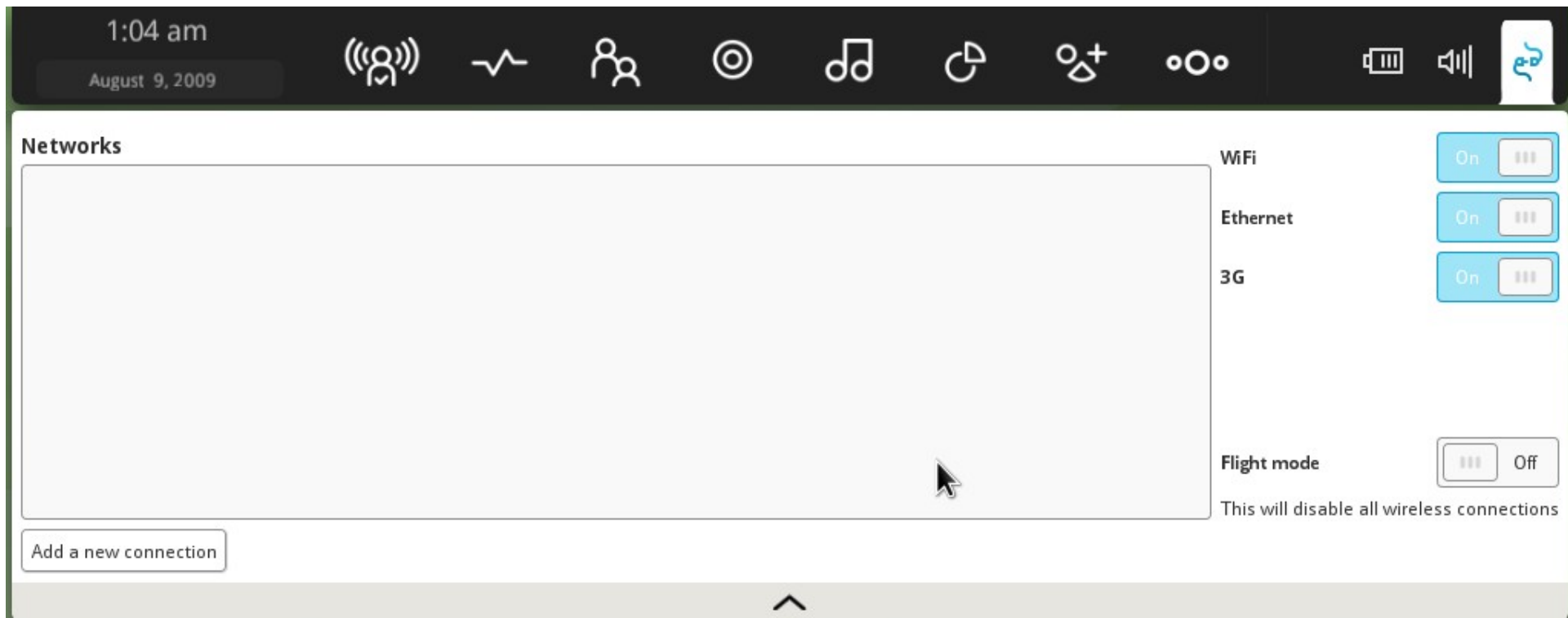
Error while Refreshing folder.

# A few big systray applets ...



**SUSE**<sup>®</sup>  
powered

# Net-working ... (NM flavour)



SUSE  
powered

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

N.

1:04 am

August 9, 2009



## Add a new connection

WiFi

Internal 3G modem and SIM card detected

▼ Britain (UK)

3G

▶ 3

▶ airtel vodaphone

▶ Jersey Telecom

▶ o2

▶ Orange

Save connection

Return to Networking

SUSE  
powered

Novell.


# Social networking / status panel <sup>N.</sup>

12:51 am  
August 9, 2009

Icons: Signal strength, Status (green pulse), Friends, Location, Music, Share, Add, More, Volume, Mute, Language

**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](#)

Taskbar: Terminal, Game, Video thumbnails, Chat window (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 ...

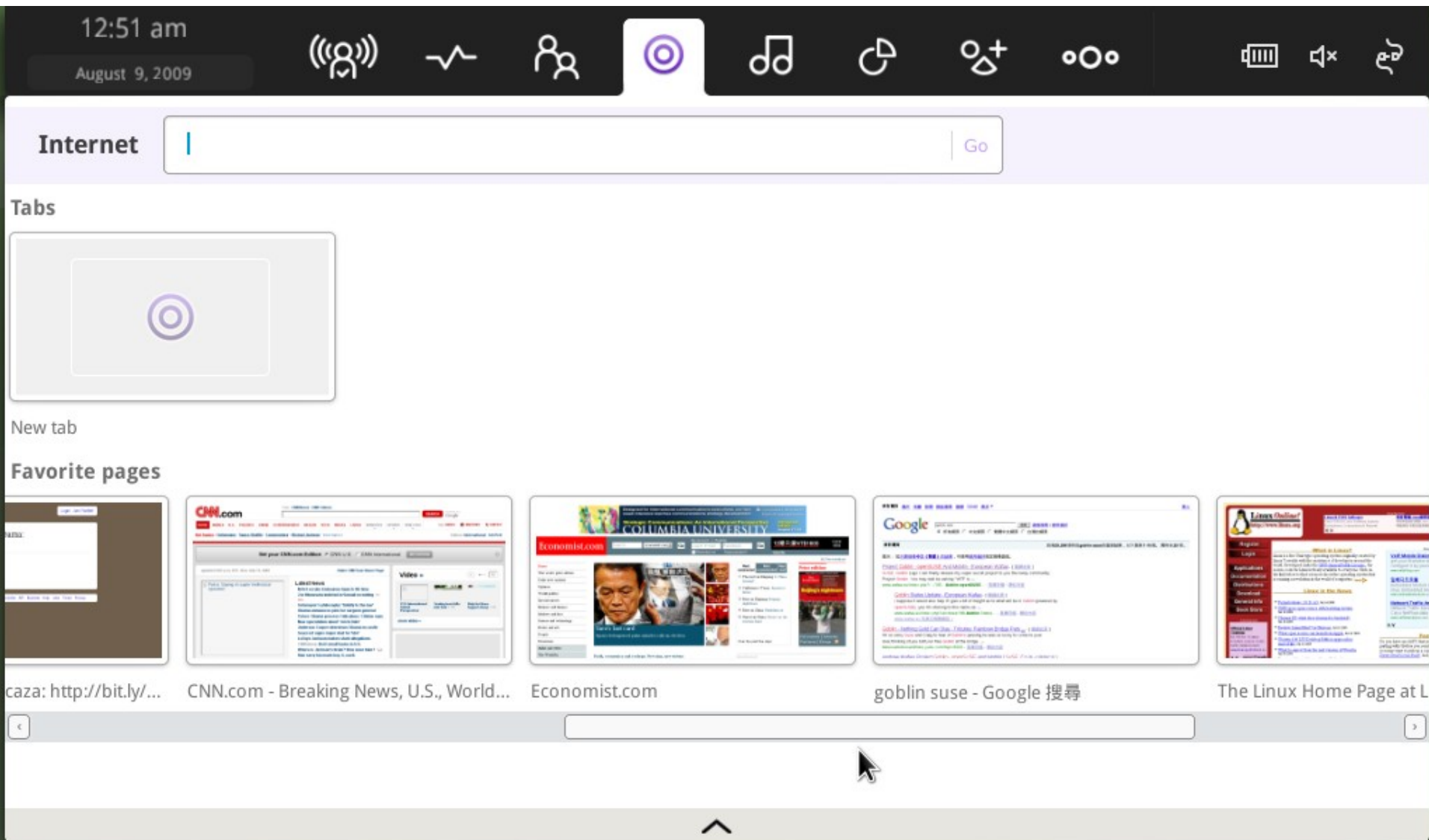
The screenshot shows an email client interface with the following elements:

- 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 threads 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



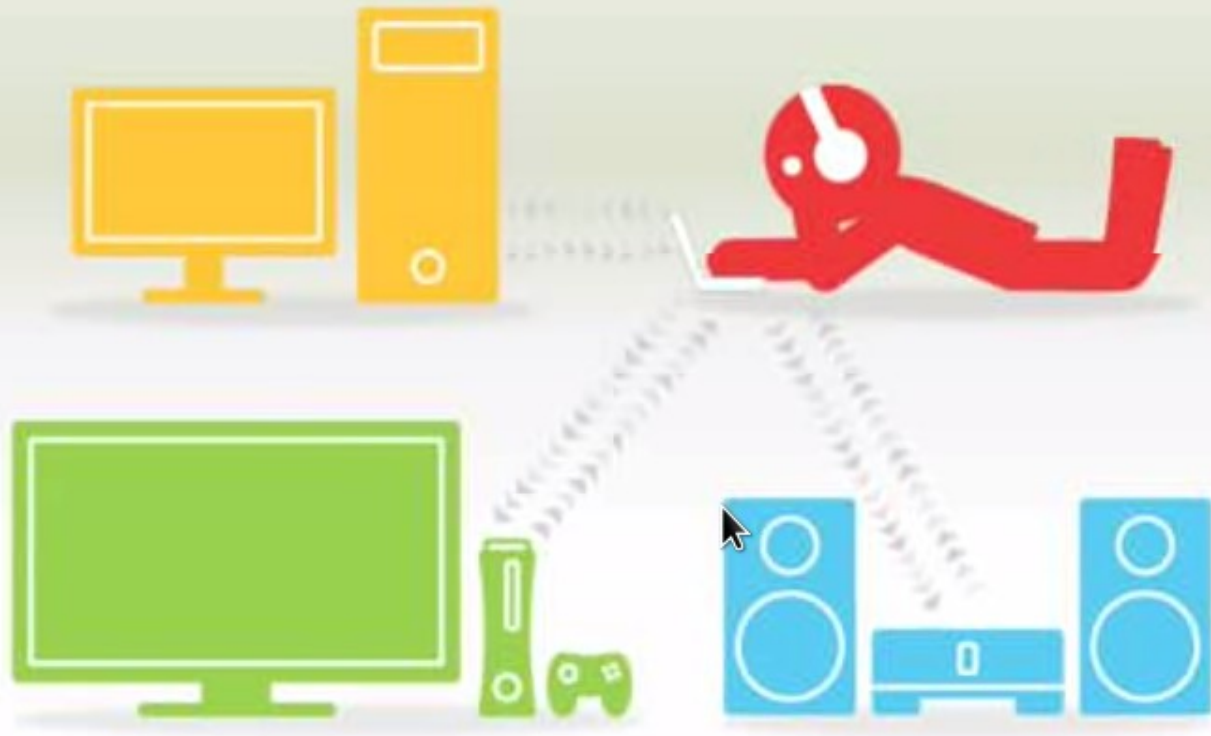
< Now Playing



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*