



CE Linux Forum

CELF Status

Tim Bird

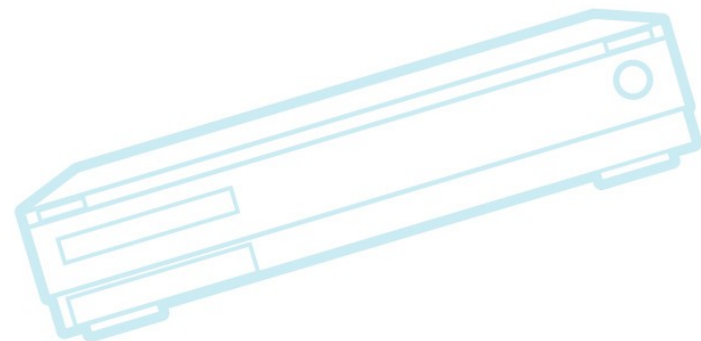
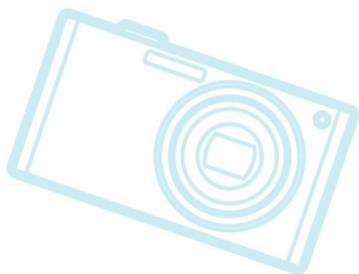
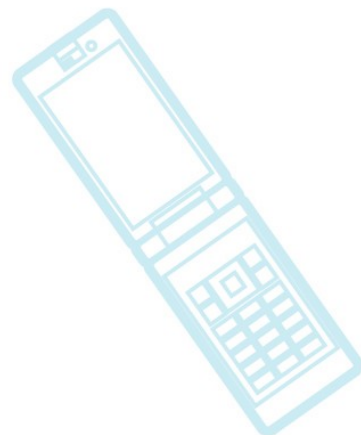
CELF Architecture Group Chair



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Agenda

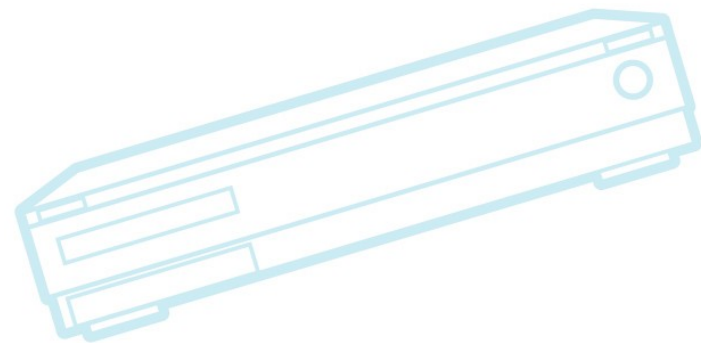
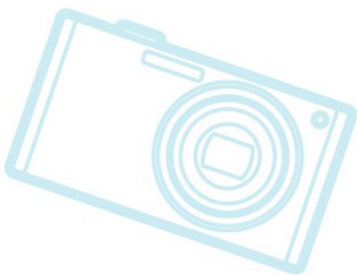
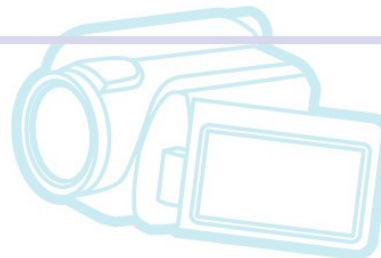
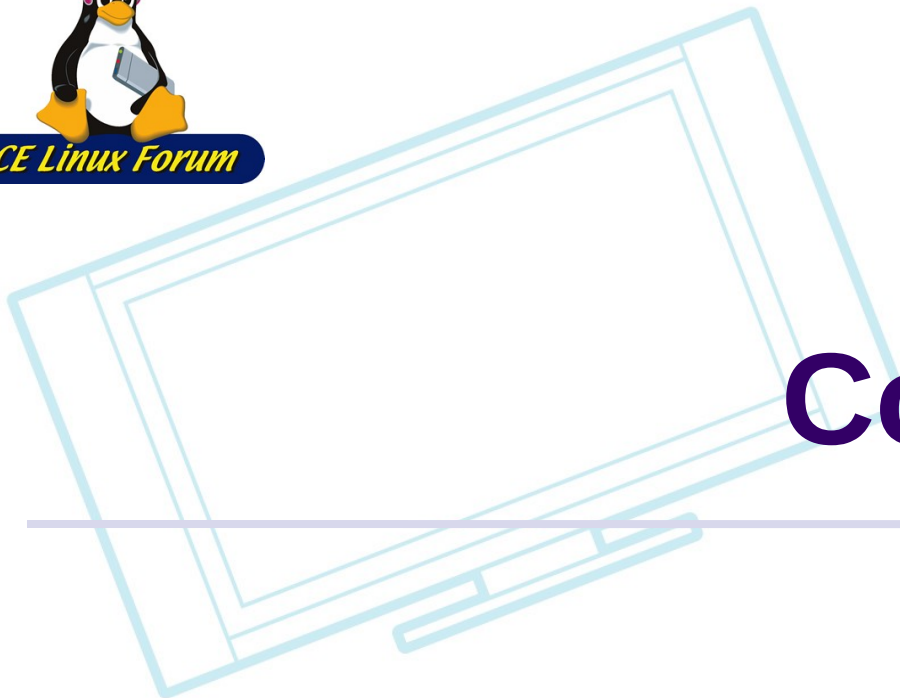
- Contract work
- Conferences
- Other stuff
- References





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Contract Work





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Recent Contract Work

- smem
- OOM notifications with cgroups
- SquashFS enhancements
- SMACK on TV prototype
- Flash Filesystem testing
- DirectFB mainlining
- Device Tree support for ARM
- Matt Mackall – embedded maintainership



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smem

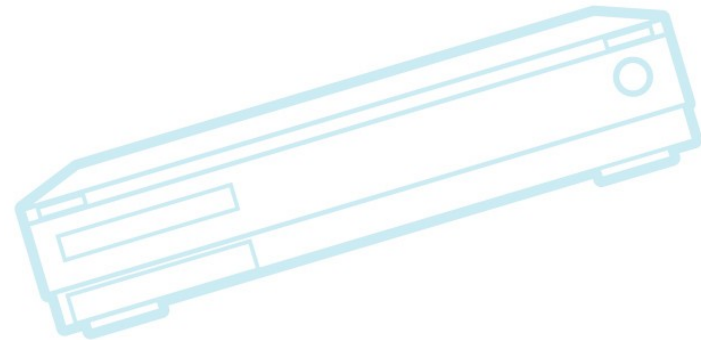
- New tool which shows “more correct” memory utilization of processes on a system
 - Supports “Unique Set Size” (USS) and “Proportional Set Size” (PSS)
 - Utilizes new information available in /proc
 - Supports visualization (charts), filtering, maps
- Contractor: Matt Mackall
- Status:
 - Presented at ELC (April 2009)
 - Continues to be refined for embedded use
 - Example: Can capture data on Android



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OOM notifications

- Add OOM notification feature to cgroups
 - Allows for fine-grained control of process memory utilization, using cgroups
- Contractor: Embedded Alley
- Status:
 - Presented at ELC (April 2009)
 - Stalled trying to get it mainlined (July 2009)





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SquashFS Enhancements

- Enhancements to user-space tools for Squashfs
 - Fix mksquashfs endianness issues
 - Add psuedo-file support to mksquashfs
- Status:
 - Completed (May, 2009)
- Contractor: Philip Lougher



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SMACK profile for TV

- Project to experiment and measure use of SMACK in digital TV
 - Create use cases for TV threats, then a set of SMACK rules for securing a TV
 - Write a white paper explaining methods and results
- Status:
 - Project just completed
 - Talk at ELC Europe on this work
- Contractor: Embedded Alley (now Mentor Graphics)



Flash Filesystem Testing

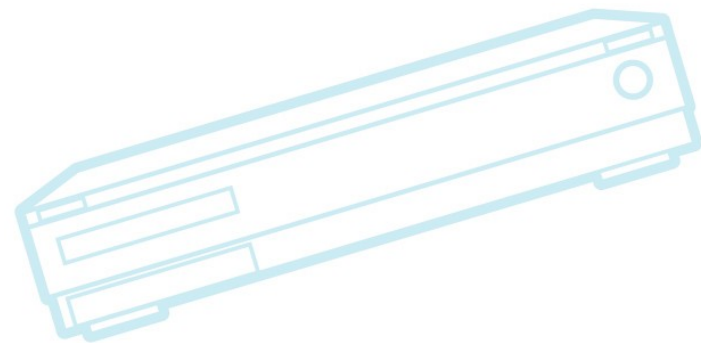
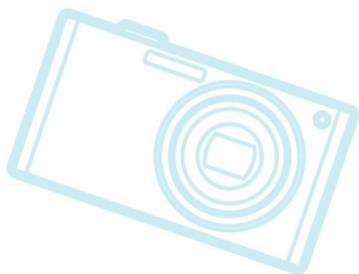
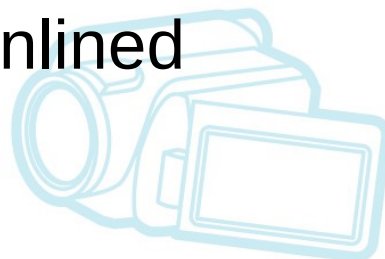
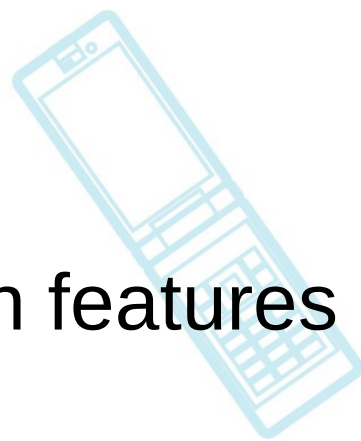
- Perform testing different of flash filesystems
 - Compare results for performance, size, robustness
 - Build automated test framework
- Status:
 - Initial report at ELC (April 2009)
 - Another report at ELCE (Oct 2009)
- Contractor: Free Electrons



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DirectFB mainlining

- Mainline support for DirectFB Fusion features
- Status:
 - Code completed, but not mainlined
- Contractor: Denis Kropp





Device Tree for ARM

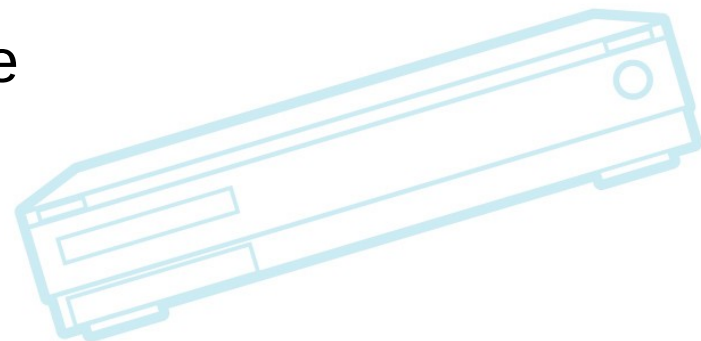
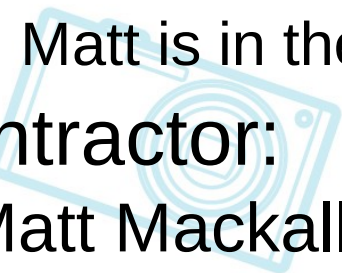
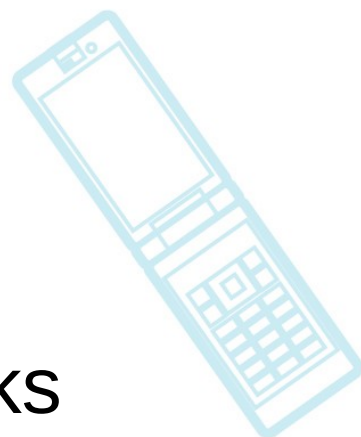
- Add support for “device tree” for ARM platforms
 - Allows for platform-neutral description of devices on a system
 - Can be integrated into kernel or passed by bootloader
 - Ultimate goal is easier board support
 - See http://elinux.org/Device_Trees
- Status:
 - Just started
 - Others working on this feature as well
 - (See ELC Europe program)
- Contractor: Secret Labs (Grant Likely)



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Matt Mackall

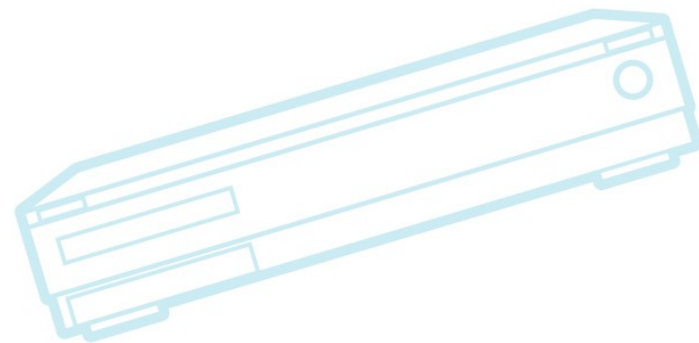
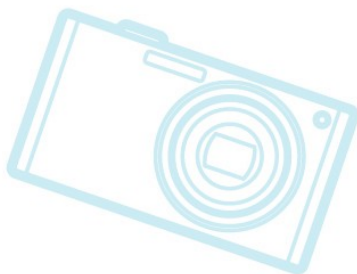
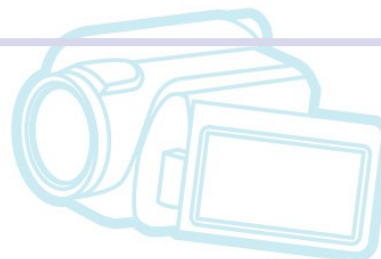
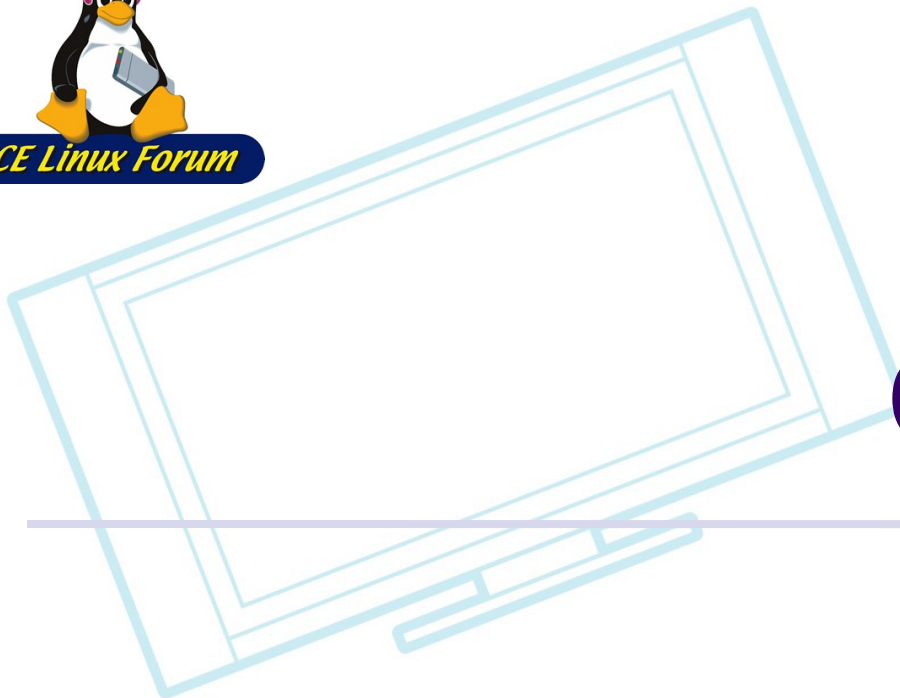
- CELF sponsor's Matt to do general “embedded Linux” maintenance tasks
 - CELF pays him part time to work on task of general interest for embedded Linux
- Status:
 - Matt is now a general “Embedded Linux” maintainer
 - Matt is in the MAINTAINERS file
- Contractor:
 - Matt Mackall





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Conferences

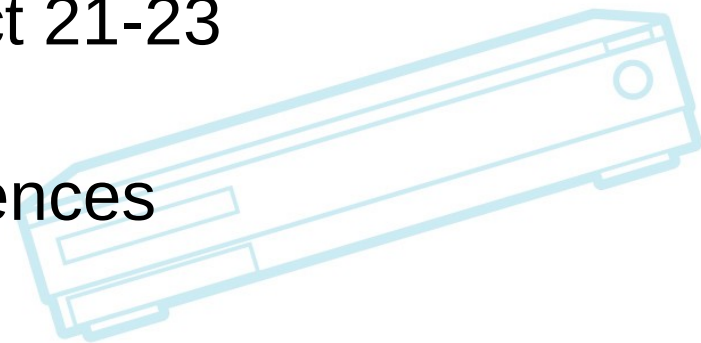
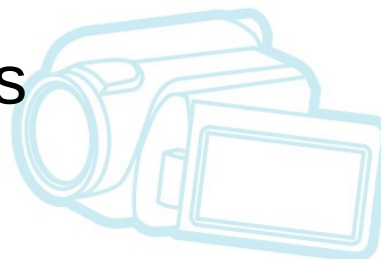
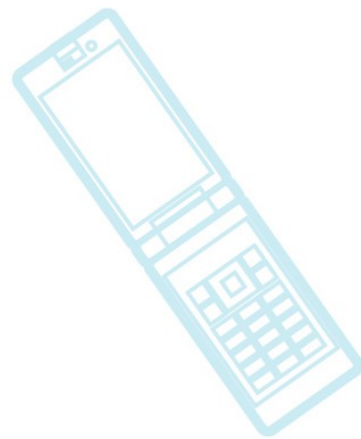




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Conferences

- Past events
 - ELC 2009
 - Japan Regional Conferences
- Future Events
 - ELCE 2009 - Oct 15-16
 - Japan Linux Symposium - Oct 21-23
 - CELF is a sponsor
 - More Asian Regional Conferences
 - ELC 2010





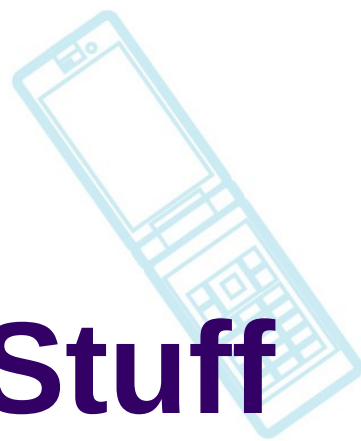
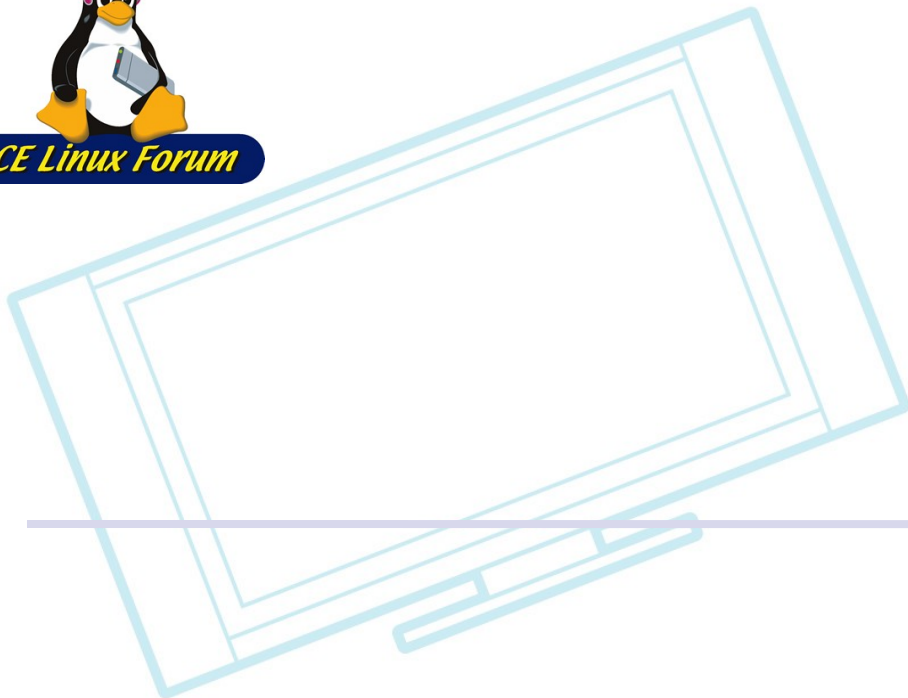
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ELC 2010

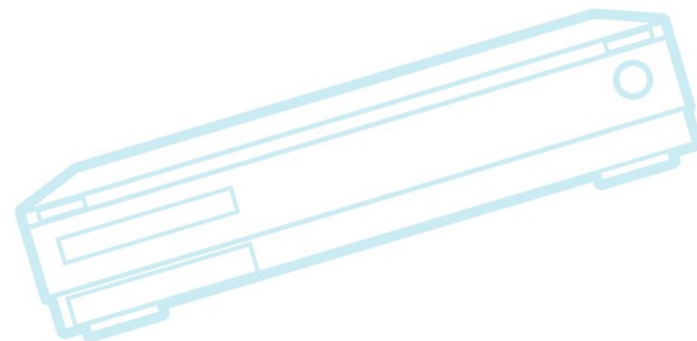
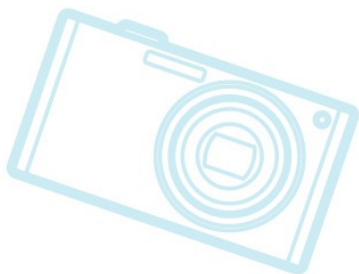
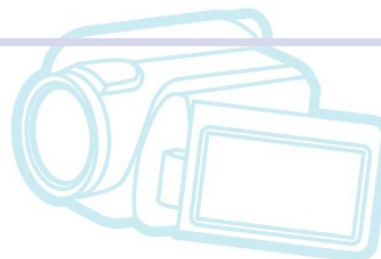
- April 12-14 in San Francisco
 - Co-located with Linux Foundation Collaboration Summit (again)
 - Worked well last year
- Call for Sessions will go out soon!
- Watch <http://www.embeddedlinuxconference.com/>
- Subscribe to elc-announce@tree.celinuxforum.org



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Other Stuff

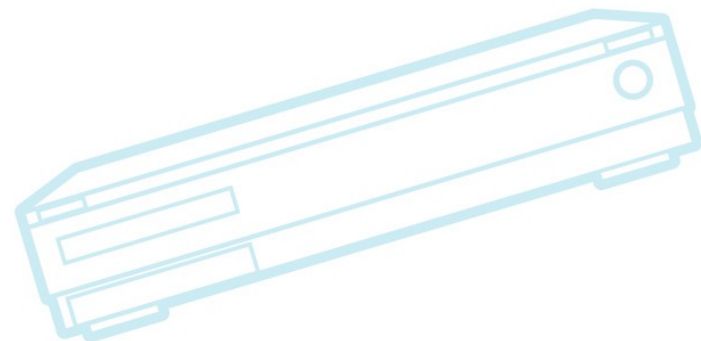
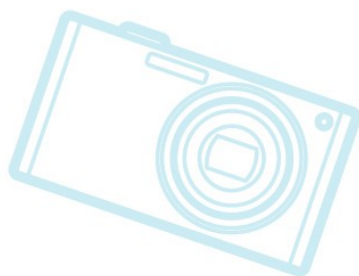
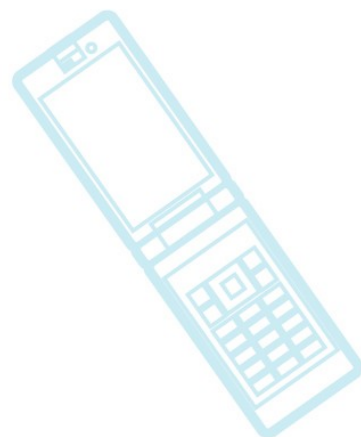




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Other Stuff

- Monthly newsletter
 - Nobody knows what CELF does
 - Just started - should see one monthly
- eLinux Wiki
- Independent developer support
- Open project planning for 2010

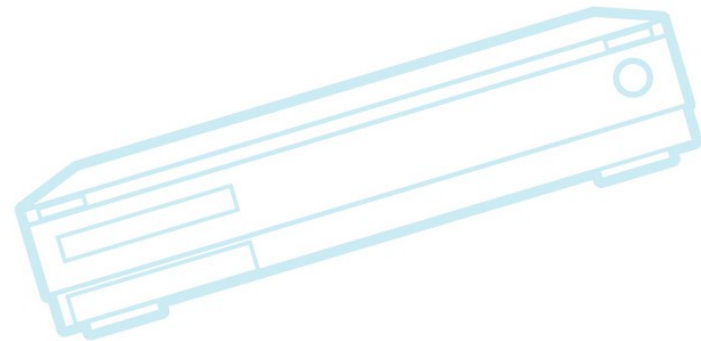




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eLinux Wiki

- <http://elinux.org/>
- Site where CELF gathers information for embedded developers
 - Has some very useful content in some areas
- Content is slowly increasing
- CELF will continue to use and promote the site
- Please add new information

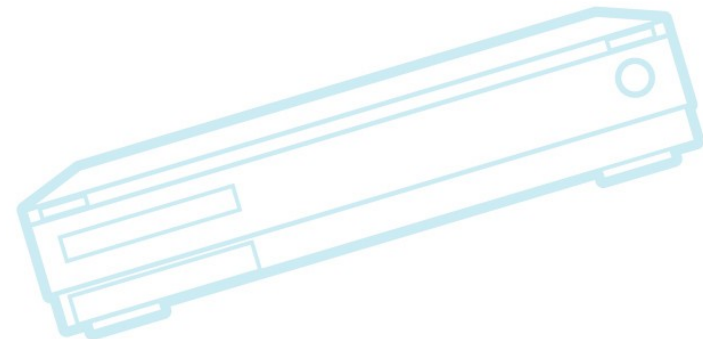
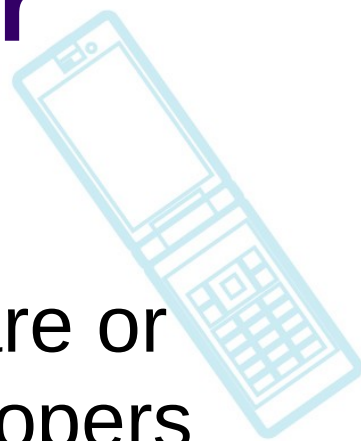




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Independent Developer Support

- Sometimes, CELF provides hardware or specifications to open source developers
 - Examples:
 - MIPS board to LLVM developer
 - DLNA specification
- Let CELF Architecture Group know if you know someone in need
 - Just e-mail me





Contract Project Planning

- Will use open process for 2010 projects
- Public can propose a project to be worked on
 - CELF will decide which ones to work on, up to our annual contractor budget
 - Others will be published
 - Can be funded or worked on by any interested party
- Watch for announcement after JLS

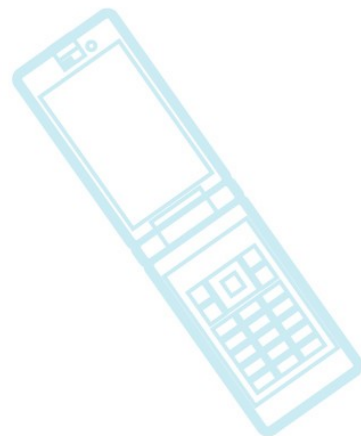


References

- **smem**
 - <http://www.selenic.com/smem/>
- **OOM notifications in cgroups**
 - http://elinux.org/Memory_Management#OOM_notification_in_cgroups
 - Links to ELCE presentation, LKML submission threads
- **SMACK on TV profile**
 - <http://elinux.org/Security#Papers>
 - See “SMACK for digital TV” link
- **Device Trees**
 - http://elinux.org/Device_Trees
- **eLinux wiki** - <http://elinux.org/>



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Questions?

