CELF Status

Tim Bird
CELF Architecture Group Chair
Agenda

- Contract work
- Conferences
- Other stuff
- References
Contract Work
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
smpem

- 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
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)
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
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
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)
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
Conferences
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
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
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
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
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/
Questions?