



Embedded Linux
Conference Europe

October 23 - 25, 2017

Hilton Prague, Prague, Czech Republic

#lfelc



ELC Europe 2017 Quick Report

Tim Bird

Architecture Group Chair

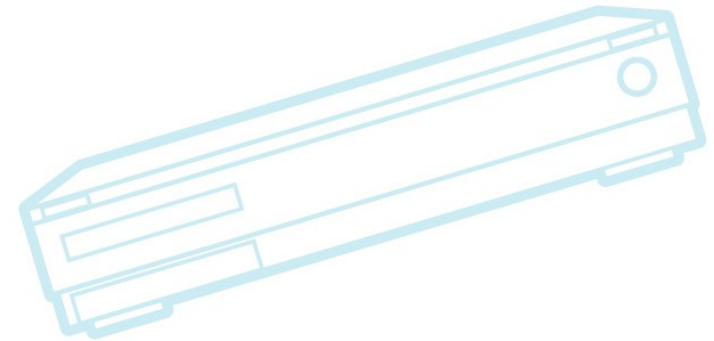
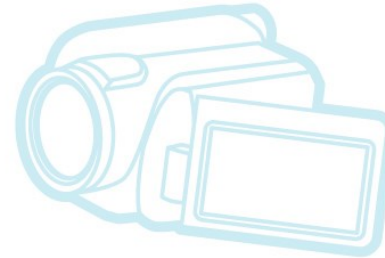
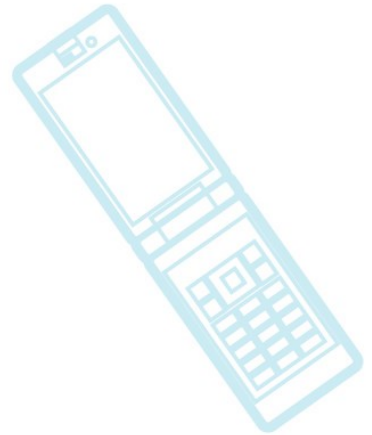
LF Core Embedded Linux Project

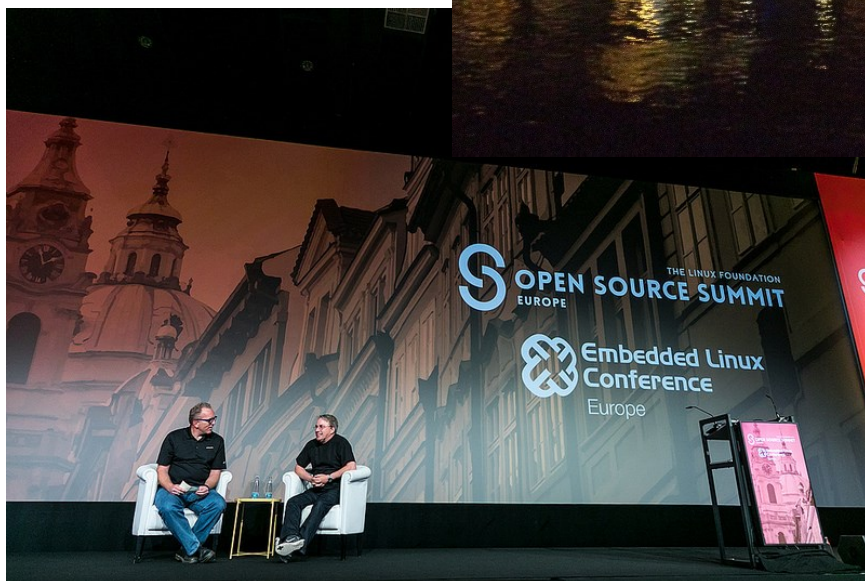


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Outline

- Conference overview
- Talks I saw
- Talks I reviewed later
- Keynotes
- People I talked to
- Miscellaneous stuff
- Resources







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Conference Overview

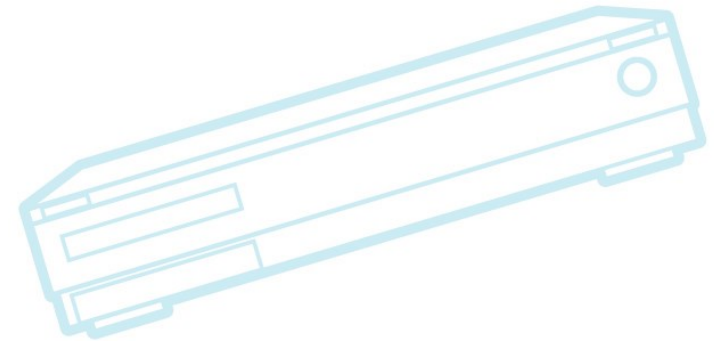
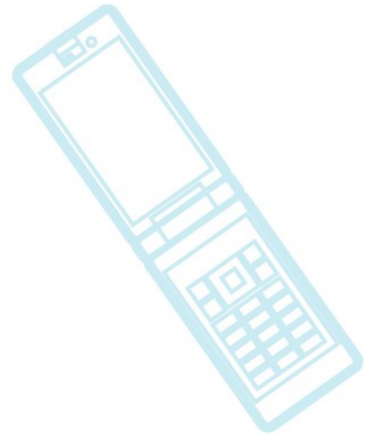
- Prague, the Czech Republic
- October 23-25
- Co-located with Open Source Summit Europe, the Kernel Summit, and other events
- Over 800 attendees for ELCE
 - Over 2000 attendees for all events
 - It was very crowded (venue could have had better flow for crowds this big)
- 60 sessions
 - Keynotes, talks, tutorials, exhibits, technical showcase, BOFs
- Also hallway track, evening events, etc.



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Talks I saw

- AGL overview
- Jenkins, libvirt autotest
- Board farm BOF
- labgrid
- State of AGL plumbing and services
- Secure software update
- Lab-in-a-box
- swupdate





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AGL thoughts

- The project is coming along nicely
 - Is actually deployed now in vehicles (in the US)
- AGL plumbing talk gave me the most detail yet about AGL internals.
 - Presented APIs
 - Made me believe they have a long-term plan for a cohesive stack, and not just a random collection of software
 - (I still worry about it being based on Qt)



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Jenkins, libvirt autotest

- Test automation hardware and software using libvirt
 - Interesting use of libvirt
- Already have Jenkins plugin to control virtual machines
 - Modified libvirt to support control of real machines (using Linutronix r4d software)
- Have command line and web-based (Jenkins) control of hardware
- Used to do RT testing
- Intriguing set of features based on existing software



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Board farm

- Lots of presentations lately
- An initiative to push towards standards
- See http://elinux.org/Board_Farm
- Mailing list:
 - We hijacked one from the Yocto Project:
 - See <https://lists.yoctoproject.org/listinfo/automated-testing>
- Very interested to get examples of board farm hardware, software and use cases from people with actual farms
 - Particularly big companies
- Want to create standards for interoperability



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Secure update/swupdate

- Systems seem pretty mature now
- Lots of people integrating with Hawkbit
- I watched these mainly to see if I could use to them to solve my provisioning problem for test automation with Fuego
 - I came away thinking that I have to have firmware support for this. Unless that's already there, it's easier to other solutions for CI provisioning
- But – these look like useful tools for doing software updates



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Talks I reviewed later

- Bootup time reduction techniques – Chris Simmonds
 - Good walkthrough of basic techniques
- Replacing x86_64 firmware with Linux and Go
 - Very scary talk about firmware on co-processors and how bad it is (and what people are trying to do about it)
- Bash the kernel maintainers
 - Good BOF session asking for feedback on Linux kernel maintainer practices
 - One big issue is differences between maintainers: how they handle patches, response time, acceptance policies, etc.



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Keynotes

- Dirk and Linus
 - video:
<https://www.youtube.com/watch?v=NLQZzEvavGs>
 - release process is stable
 - consistent, short release cycle removes a lot of pressure to get stuff into a particular release
 - Always need to encourage new contributors
 - Being a maintainer is hard
 - Maintainer groups is good to mentor people and to prevent burnout
 - Kernel testing is getting better
 - Linus still enjoys doing his job



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Keynotes (cont.)

- Siemens – Jan Kizka
 - video: https://www.youtube.com/watch?v=vO0_Ihpeqas
 - Migration is always from proprietary software to Open Source (never back)
 - Lots of different Linux technologies in various products
 - Typical of a big company with wide-ranging products
 - You have to use Open Source to manage software complexity
 - Long life is a big issues (at least 10 years lifetime)
 - Software HAS to be updatable
 - Upstream first is only way to avoid self-inflicted pain of forked projects
 - Lots of work by Siemens on compliance tools and projects



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People I talked to

(the halfway track)

- Geert Utterhoeven – suggested workaround for a bug with a Renesas board in my lab
- Richard Purdie – offered tutorial on Yocto Project ptest
- Greg KH – reported Fuego bug
- Jan-Simon Moeller – discussed AGL use of Fuego
- Werner Johansen – discussed Sony debug hardware
- Matt Porter – talked about experiences with NuttX
- Grant Likely – talked about how to manufacture small quantities of open source hardware through SeedStudio
- Kevin Hillman – discussed Lab-in-a-Box, and integration between Fuego, KernelCI, and LAVA
- Michel Simek – asked about Fuego roadmap for hardware testing
- Shuah Khan – discussed kselftest issues and roadmap



Miscellaneous stuff

- Michael Opdenacker received a special award for 11 years of contributions to ELC
 - He initiated video recordings, which we still do today, and which benefit the industry greatly
- During the closing game, I asked a question about the Prague castle
 - Everyone from the Czech Republic got it wrong
 - Misleading wording from Wikipedia was to blame
- I was elected to the Linux Foundation technical advisory board (TAB)



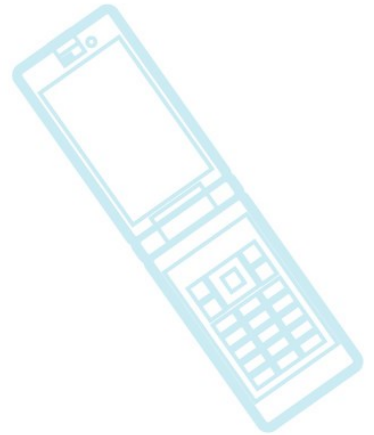
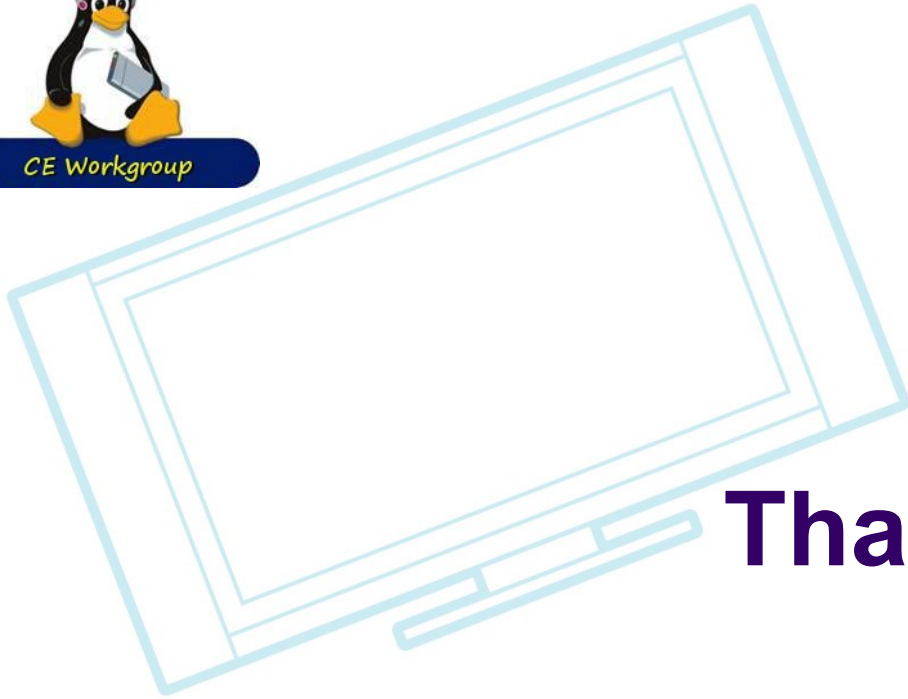
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Resources

- Presentations page:
 - https://elinux.org/ELC_Europe_2017_Presentations
- Event archive:
 - <http://events.linuxfoundation.org/events/archive/2017/embedded-linux-conference-europe>
- Video playlist:
 - https://www.youtube.com/playlist?list=PLbzoR-pLrL6pISWAq-1cXP4_UZAyRtesk



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Thanks!

