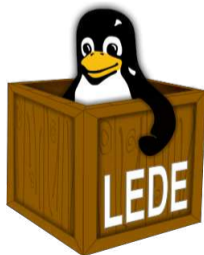


# Improving the Quality of OpenWrt/LEDE

If it compiles, ship it.

# Who am I?

- c and python developer
- hardware and embedded projects
- coreboot - open source bootloader
- LEDE + OpenWrt
- freelancer



**OpenWrt**  
Wireless Freedom

# pain station?

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- Who has broken a board?

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- Who has broken a board?
- Who had to solder UART?

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# pain station?

- Who has broken a board?
- Who had to solder UART?
- Who had to use JTAG?
- Who has soldered the flash chip?
- Who has broken 100 devices at once?





# Testing..

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- unit tests

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- unit tests
- integration tests on VMs

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- test on real devices

# Testing..

- unit tests
- integration tests on VMs
- test on real devices
- human tests

# build bot

- `git clone git.lede-project.org/source.git`
- `make`
- `rsync bin/ https://downloads.lede-project.org/snapshots`

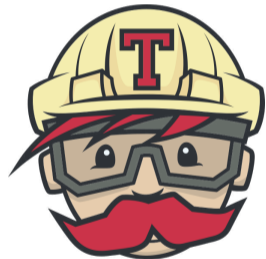
# build bot

- `git clone git.lede-project.org/source.git`
- `make`
- `rsync bin/ https://downloads.lede-project.org/snapshots`
- **you'll get blamed on IRC when you break it**



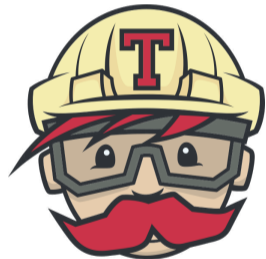
# travis

- active on feeds
- only pull request



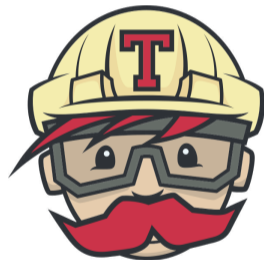
# travis

- active on feeds
- only pull request
- make check
- make compile



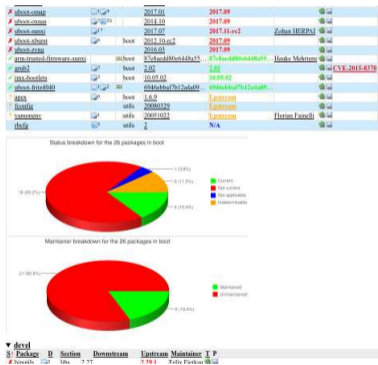
# travis

- active on feeds
- only pull request
- make check
- make compile
- **report into the Pull Request**



## uscan

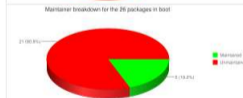
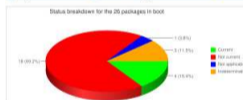
- checks for updates



## uscan

- checks for updates
- CVEs

Package	Version	Latest Version	Maintainer
aboot-compat	2017.01	2017.09	
aboot-compat	2014.10	2017.09	
aboot-compat	2017.07	2017.11-ev2	Zohar HIRDAI
aboot-ybvars	boot	2017.10-ev2	
aboot-ybvars	2016.05	2017.09	
am335x-evm (firmware-stubs)	miboot	8.7.0-ack400e-64.0b.55	8.7.0-ack400e-64.0b.55... Herikio Molytrem
ar713	boot	2.02	2.02 CVE-2016-5479
ata-bootlets	boot	10.05.02	10.05.02
aboot-fritz400	boot	0946ebaf7617a6a09	0946ebaf7617a6a09...
BEES	boot	1.6.0	1.6.0
bootfit	utils	200803792	1.0.0
bootrom	utils	20051021	1.0.0 Herikio Molytrem
ibcfw	utils	2	N/A

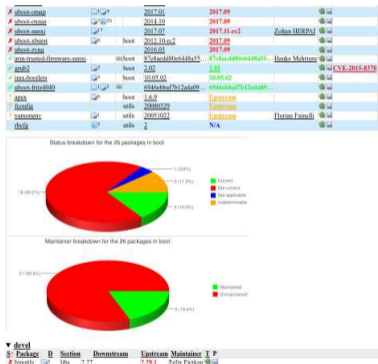


▼ devel

Package	D	Section	Downstream	Upstream	Maintainer	F
Recent		lib	→ 77	3.78.1	Felix Fietkau	

## uscan

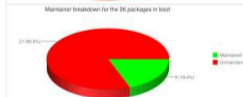
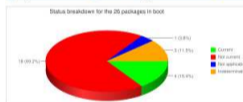
- checks for updates
- CVEs
- send mails to maintainer



## uscan

- checks for updates
- CVEs
- send mails to maintainer
- Thanks to swalker

Package	Version	Latest Version	Upstream	Maintainer	Status
libcurl	2017.01	2017.09			🟢
libcurl	2014.10	2017.09			🟢
libcurl	2017.07	2017.11-ev2	Zohar HIRDAI		🟢
libcurl	2017.10-ev2	2017.09			🟢
libcurl	2016.05	2017.09			🟢
libcurl (firmware-stable)	2.7.0-64.0a.55	2.7.0-64.0a.55	Herik Mohit		🟢
libcurl	2.02	2.81			🟢 CVE-2016-5379
libcurl	10.05.02	10.05.02			🟢
libcurl	6946ebaf7617afaf09	6946ebaf7617afaf09			🟢
libcurl	1.6.0	1.6.0			🟢
libcurl	20080702	1.6.0			🟢
libcurl	20081001	1.6.0			🟢
libcurl	2	N/A		Herik Mohit	🟢



▼ devel

Package	D	Section	Downstream	Upstream	Maintainer	F
libcurl				2.7.0	Felix Fietkau	

# coverity

- static analysis





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- static analysis
- finds memleaks



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- static analysis
- finds memleaks
- finds runtime issues



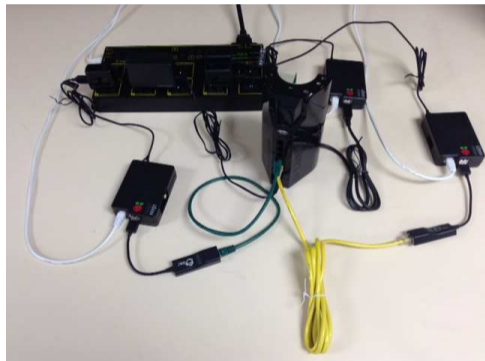
# coverity

- static analysis
- finds memleaks
- finds runtime issues
- **randomly updated**



# boardfarm

- hardware testing
- network tests (iperf, netperf, nat)
- setup wifi, memory usage, ...
- **no integration**



# LAVA

- hardware testing
- distributed
- api
- more flexible
- no tests
- no integration



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- [...]

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- green and red lights



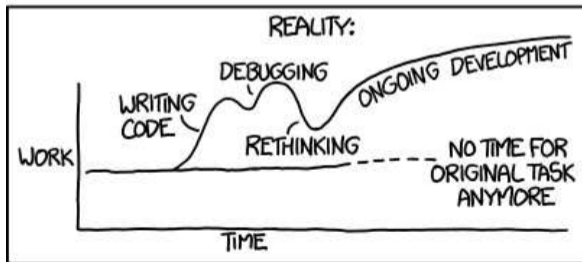
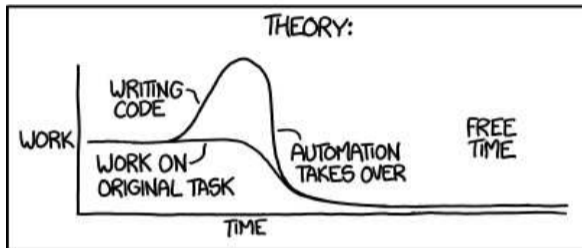
# What's a good tool?

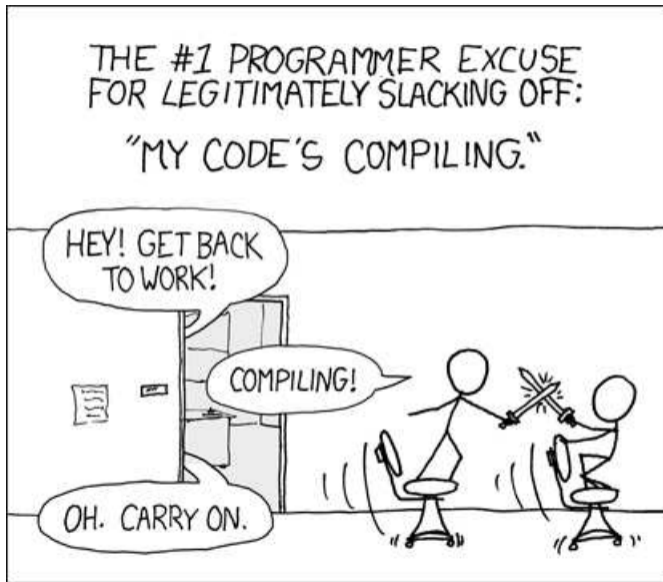
- upstream
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# What's a good tool?

- upstream
- well integrated
- automated
- green and red lights
- helpful, not painful
- maintained by **YOU!**

"I SPEND A LOT OF TIME ON THIS TASK.  
I SHOULD WRITE A PROGRAM AUTOMATING IT!"





# Future plans and ideas

- CVE/CPE tag in packages

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# Future plans and ideas

- CVE/CPE tag in packages
- more PKG XYZ checks e.g. license
- reproducible builds
- automated hardware tests
- automated test of commits before merging
- **your ideas**

# Thank you

Alexander Couzens

<lynxis@fe80.eu>

390D CF78 8BF9 AA50 4F8F  
F1E2 C29E 9DA6 A0DF 8604