



Kernelci.org

A million boots and counting

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# Review: What is kernelci.org?

## Build upstream kernel trees

- Mainline, linux-next, arm-soc
- Stable, stable-queue
- Various maintainer trees
- All upstream defconfigs, plus
  - Big endian, Thumb2, EFI, LPAE,...

## Reporting

- Web, Email, RSS

## Boot kernels on a variety of hardware

- 30 SoCs (arm, arm64, x86)
- 174 unique boards

## Since May 2014:

- 1.2 M boots, 500k builds
- 6k tests

...and counting: <http://kernelci.org/stats/>



# Review: Goals

## Goals

- Wide range of hardware
- Distributed
  - 9 different board farms contributing
    - More coming soon...
  - Automation framework independent
- Open
  - [wiki.kernelci.org](http://wiki.kernelci.org)
  - REST: [api.kernelci.org](http://api.kernelci.org)
  - #kernelci on IRC, Freenode

## Labs -- Thank you!

- Collabora
- Embedded Bits
- Pengutronix
- BayLibre
- Linaro
- jsmoeller
- tbaker
- mhart
- khilman
- <your lab here>

## Primary Developers

- Tyler Baker, Linaro
- Milo Casagrande, Linaro
- Kevin Hilman, BayLibre



# Booting is cool, but what about tests?

We are running tests...

- kselftests
- hackbench
- cyclictst
- lmbench
- LTP

But....

... no reporting or automated regression checking (yet.)

... and only on a small subset of platforms.

We need help:

- Front-end: visualization, reporting
- More hardware, dedicated to long-running tests.

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We need help:



# In progress features

## Compare views

- “diff” similar builds or boots
- Size: kernel image, modules, ELF sections
- Build errors, warnings
- Boot errors, warnings
- Boot time



# In progress: Energy regressions

## Power measurement and regression

- Measure power during boot, tests
  - Current, Voltage: min, max, avg
  - Energy
  - Detect regressions
  
- Measurement
  - ARM energy probe
  - BayLibre ACME
  - ...

Plug, Plug...

Check out the:

**BayLibre booth**



# What's next

- Visualization for test results, regressions
- Full-text search
- Move to the cloud, distributed, Elastic Search?
  
- More compiler versions
- More arch support
- Cortex M support
  - STM32
  - Energy Micro
  - M4 on i.MX[67]



# How to help?

- **Use it**
  - Check the platforms/boards you care about
  - Find/report regressions
  - Confirm fixes
  - Spread the word
- **Contribute back**
  - Automate your lab
  - Submit results

Write some tools...

All the historical data is in the backend. You could write a tool to:

- Track and plot kernel bloat
- Analyze test results for your platform
- ...

