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/
Goals

● Wide range of hardware
● Distributed
  ○ 9 different board farms contributing
    ■ More coming soon...
  ○ Automation framework independent
● Open
  ○ wiki.kernelci.org
  ○ REST: 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
- cyclicgtest
- 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
  - ...

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
- ...