

C Forth on the RP2350? Yes, Please!

M. Edward (Ed) Borasky

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└ A (Welcome) Surprise in the (E)mail

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August 8, 2024 - the Raspberry Pi Pico 2 is announced

- ▶ Raspberry Pi Pico 2, our new \$5 microcontroller board, on sale now
- ▶ Our RP2350 Partners made all this excellent stuff for you
- ▶ What's new in Raspberry Pi Pico 2
- ▶ RP2350: the brains of Raspberry Pi Pico 2

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Pico vs. Pico 2

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RP2040 vs. RP2350

So I bought a few partner boards

- ▶ Pimoroni Pico Plus 2
- ▶ SparkFun Pro Micro - RP2350
- ▶ iLabs Challenger+ RP2350 BConnect
- ▶ iLabs Challenger+ RP2350 WiFi6/BLE5

The CLAMS Development Environment

A collection of command-line Linux tools

- ▶ Raspberry Pi Pico-series C/C++ SDK
- ▶ Raspberry Pi Pico Python SDK
- ▶ CircuitPython
- ▶ Arduino-Pico
- ▶ PlatformIO Core (CLI)
- ▶ Coming soon! Zephyr

A container to run them in!

- ▶ Many third parties have limited testing resources
- ▶ If they support Linux at all, it's RHEL (expensive), or
- ▶ Ubuntu 22.04 LTS aka "Jammy Jellyfish"
- ▶ So I built a Distrobox container running Ubuntu 22.04 LTS
- ▶ Hosted on Universal Blue Bluefin
- ▶ (But any Distrobox host will work - any recent Linux distro)

C Forth

Why C Forth?

- ▶ Optimized for microcontrollers
- ▶ Comprehensive - derived from Mitch Bradley's Open FirmWare
- ▶ Extensible in either C or Forth!
- ▶ Portable - I want to run Forth on other microcontrollers
- ▶ Linux build process is straightforward using PlatformIO

Demo

Questions

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└─URLs

URLs

Where's all that stuff?

- ▶ C Forth: <https://github.com/MitchBradley/cforth>
- ▶ CLAMS development environment: https://github.com/AlgoCompSynth/CLAMS/tree/main/dev_env
 - ▶ warning - not much documentation yet!
- ▶ These slides: https://github.com/AlgoCompSynth/CLAMS/blob/main/presentations/cforth_on_the_rp2350.pdf