C Forth on the RP2350? Yes, Please!

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Section 1

A (Welcome) Surprise in the (E)mail

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

Pico vs. Pico 2

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

Section 2

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)

Section 3

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

Section 4

Demo

Section 5

Questions

Section 6

URLs

Where's all that stuff?

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