Customize your CROPS containers with crops-generator

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Konsulko Group

- Services company specializing in Embedded Linux and Open Source Software
- Hardware/software build, design, development, and training services
- Based in San Jose, CA with an engineering presence worldwide
- [https://konsulko.com/](https://konsulko.com/)
Baylibre

• Embedded and Open Source services company
• In the top 20 list of contributions to the Linux Kernel
• Based in the EU and North America
• https://baylibre.com/
CROPS history

● Originally to solve “Need Yocto/OE, but everyone is on Windows or Mac” and “everyone wants to use <...> IDE”
  ○ SDK integration
  ○ Windows Subsystem for Linux (the original)...
  ○ Windows/Mac file systems are not compatible with Linux
  ○ Developer workflow centric

● Now more about build system dependencies
  ○ Here is a container with everything you need to build
  ○ A lot of folks use it purely for Continuous Integration
Containers are NOT Virtual Machines

REPEAT.

Containers are ephemeral.

Containers are minimal content to do a task.

Only that.

CONTAINERS ARE NOT VIRTUAL MACHINES.
CROPS current and future use cases

- I’m a user who wants CROPS plus *myspecial apps*. What’s the right way to do this?
- I’m a hardware vendor who wants to use CROPS plus *myspecial sauce* to minimize support issues.
- I’m a hardware vendor who doesn’t want to distribute a (Docker) container because <insert legal issues here>
Crops-generator design goals

- Re-use what we produced from CROPS.
  - Containers built on top of other containers
- Menu driven and extensible.
- Minimal Dockerfile experience needed
- Doesn’t go off into the weeds
  - Doesn’t tie you to layer management tools
  - Does one thing well
  - Allows end users to extend
- Shall not break Continuous Integration
Designing crops-generator

● Tim and Eilís weekly CROPs kvetchathon
  ○ Can not underestimate bouncing ideas
  ○ Lots of menuing systems
  ○ Kas does some of this, but...
    ■ repo, git, submodules, oe-setup-layers

● Write our own or re-use
  ○ Looked at python curses
    ■ Original similar tool was too much “code” for other devs
  ○ Embedded devs know KConfig
Where to get crops-generator?

`git clone https://github.com/crops/crops-generator`
Crops-generator demo
Path Forward

- **Pre-canned examples**
  - Especially with alternate toolchain examples
  - `crops/poky-container`

- **Testing**
  - Right now, testing is manual
  - Incorporate into CROPs CI

- **Re-visiting** *minimal* container requirements

- **Re-thinking** `CMD / ENTRYPINTS`

- **Generate** `crops/poky` with `crops_generator`