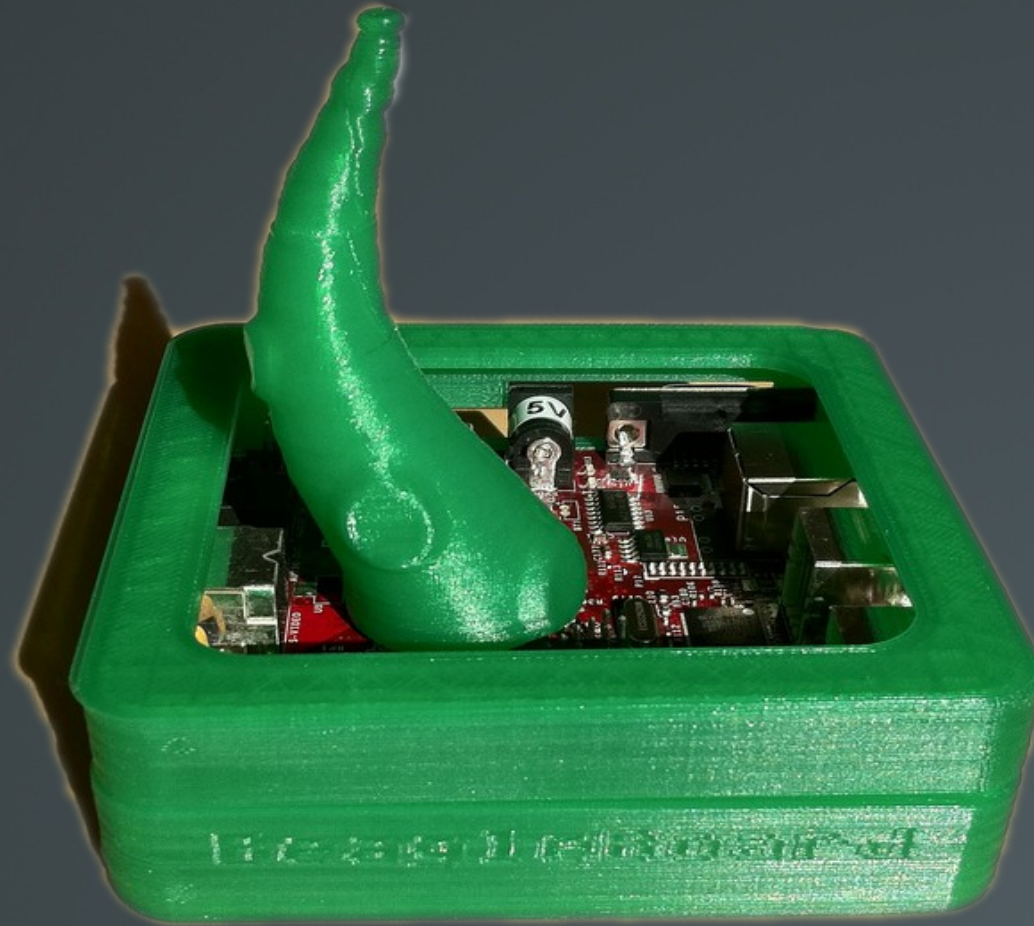


Integrating Yocto and OpenEmbedded



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ELC 2011



Bias

- I'm a distro guy working for a silicon vendor
 - Involved with OE from early on (2003)
 - Core developer till we stopped using that term
 - Member of the OE Technical Steering Committee
 - Founder of the Angstrom distribution
 - With Texas Instruments UK since 2009
 - Only x86 hardware in the house are laptops and buildserver



Ask questions when you have them



Terminology 1/2

- Yocto is an umbrella project, not a buildsystem
- OpenEmbedded is a buildsystem, not a distribution
- Angstrom is a distribution, built with OE
- An image is a root filesystem
- A recipe is a file with instruction for OE to build stuff



Terminology 2/2

- A layer is a bundle of metadata (recipes + conf files)
- Bitbake is the parser for the recipes and conf files
- BSPs contain kernel, bootloader and recipe tweaks, usually a separate layer



Yocto overview

- The umbrella includes:
 - Pseudo – fakeroot replacement
 - Cross-prelink
 - Eclipse plugin
 - Autobuilder
 - OpenEmbedded-core
 - And more



Yocto/OE differences

- Yocto is very process oriented, it is a toolmaker
- OE is developed by people needing a tool
- From a distro POV OE-core is missing 2 years of refinement, but is rapidly closing the gap



OpenEmbedded overview

- Classic OE:
 - Bitbake
 - OE repo (7934 recipes)
- OE-core:
 - Bitbake
 - OE-core (789 + 61(demoapps) + 5 (rt) + 4 (docs) recipes)
 - Meta-oe (115 recipes)
 - Meta-angstrom (36 recipes)
 - Meta-texasinstruments (19 recipes)



Layers

- Layers are like LEGO blocks, not a flat onion like structure
- OE-core is a minimalistic layer, it will get you a console prompt or a single X GUI in Qemu
- Distributions live in seperate layers to set policy
- Machines live in seperate layers to provide configs
- Extra metadata lives in seperate layers to make the LEGO blocks small enough



Post ELC-E 2010 proof of concept 1/3

- Starting point:
 - Copy over angstrom files
 - Copy over kernel/uboot/etc
 - Copy over machine configs
 - Add in missing recipes for console-image



Post ELC-E 2010 proof of concept 2/3

- Second pass:
 - Copy over gtk+ stack from OE
 - Merge in extra GNOME bits
 - Overlay kernel.bbclass, add OE fixes
- Third pass:
 - Use sstate
 - Merge in OE gcc 4.5.2
 - Merge in SOC_FAMILY



Post ELC-E 2010 proof of concept 3/3

- Reaches "barely useable" before yocto summit
- Console-image reached feature-parity with OE early February
- Having Richard in my jabber list was invaluable



Post merge decision

- Rename yocto layer to OE-core
- Only keep qemu machines in OE-core
- Remove poky distro from OE-core



End of slides

- Time for:
 - Asking questions!
 - Using the sharp sticks Dave brought
 - Blatant trolling

