OpenEmbedded musings about buildsystems

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What is OpenEmbedded
   Past
   Present

The problems
   No world domination for you
   Problems in depth

The future
   Wishlist
   Sane systems
Let there be determism

- Founded by Chris Larson and others to leave the age of buildroot behind
- Created to be flexible. Support various architectures and configurations
- Make it possible to just create one package, one toolchain or complete distributions
- Self contained and deterministic, helps to obey the GPL
Success is near

- OpenEmbedded is used to bootstrap various Debian ports
- OpenEmbedded is used to create community distributions
- OpenEmbedded is used at research facilities
- OpenEmbedded is used for Consumer Electronic
- OpenEmbedded is a collaboration point for system and application developers
- OpenEmbedded is used in your company?!
The future

- Add new architectures and machines
- Add and update packages
- world domination
Your buildsystem was just too ugly

- Convenience
- Cleverness
- Laziness
- Wrong assumptions (stupidity)
Convenience the lovely enemy

- You hardcode the compiler, please use $(CC) . . .
- I installed this helper library to /usr/local lets change $(CFLAGS)
- you paste libtool in your autconf verbatim
- Bad examples are: asterisk, mad-fcl, . . .
Cleverness - keep it stupid simple

- I could compile and execute this test and decide which algorithm performs best
- If you use autoconf please honor the cross variable and provide a way to select the algorithm from the outside
Laziness

- Compile the host/native application with the target flags
- Reinvent the wheel to detect libraries
- Bad examples are: fontconfig, poppler
Wrong assumptions

- Hardcode paths and filenames, simply assume they are present
- Everybody wants to install to /usr
- Let us hardcode pkgconfig files
- Bad examples include glibc
To take part in the world domination your buildsystem should

- be something you don’t create in the last minute
- not hardcode paths, or simply add them
- make it possible to enable/disable features from the outside
Sane systems include

- (GNU)Makefiles
- autoconf, automake
- cmake
- qmake