

ToolChain and Build System Working Group

EuroBSDCon DevSummit 2012
Warsaw, Poland



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Why toolchain and build system?



Agenda

- Introductions
- Recap of Cambridge Devsummit
- Status
- Work in progress
- General discussion
- Session summary



Introductions



Cambridge DevSummit Summary



Cambridge DevSummit Summary

+ Updates



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meta mode

- Vastly better dependency tracking
 - Requires small kernel module
- Requires bmake import



bmake import

- Imported and installed as bmake
- `WITH_BMAKE` option to install as make
- Add compatibility shims to *.mk
- Merge :tu and :tl back to 7-STABLE
- Need to work with portmgr on transition



Build system direction

- Need to start a discussion on toolchain@
- A few starting points
 - Switch to a staging model
 - 1st class external toolchain support



Other bits

- lldb useful for simple things
 - need a port soon
- mclinker making progress
 - expected to be good enough for 10
- libc++ needs more testing
 - needs to be enabled automatically



Clang by default

- Cross build (include buildenv) does work
- WIP for -target based native cross
- Bootstrap issues fixed with `bsd.compiler.mk`
- Ports getting better and `USE_GCC=any` workaround committed
- `libm` needs attention



Clang by default

- Cross build work

Flagday
November
5th



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Status



Base System Updates

- `WITH_CLANG_IS_CC` transition now transparent
- `libc++` builds by default when compiler is clang



LLVM Architecture Support

- i386 & amd64 stable
- arm cross builds with patch and abi switch
- mips, ppc getting close



Work in Progress



bmake & meta moded

- bmake imported
- :tu and :tl added to make
 - will be merged
- base *.mk files work with both versions
- work still needed on ports



Target triple support

- e.g. `-target i386-unknown-freebsd10.0`
- Requires `--sysroot` support in practice
- Support for native cross compilers (clang)
- Simplifies external toolchain support
- Working other than rescue



External Toolchain

- Trivial \$PATH hack working today for compiler
- Need to expand bsd.compiler.mk support
 - Currently broken with gcc46
 - Need a TOOLCHAIN_CONFIG file
- Still build cross toolchain
 - Should we avoid building cross toolchain by default?



Install as non-root

- `WITH_INSTALL_AS_USER` only works for simple cases
- Want to create FS images with correct permissions
- Importing NetBSD mtree and install
- Follow with adding manifest support to install



Other Projects?

- What are you working on or thinking about working on?



General Discussion



Summary



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