OpenBSD ports...what the heck?!

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Agenda

1. Introduction
2. Hackathons
3. pkg_add(1)
4. Recent developments
5. Differences with pkgsrc
6. Conclusion
Who am I?

- Jasper Lievisse Adriaanse (jasper@).
- Developer since 2006.
- Code in all parts of the system.
Terminology

- Port
- Platform
OpenBSD...

- Unix-like, multi-platform operating system.
- Derived from 4.4BSD, NetBSD fork.
- Kernel + userland + documentation maintained together.
- 3rd party applications available via the ports system.
- Anoncvs, OpenSSH, strlcpy(3)/strlcat(3).
- One release every 6 months, regardless.
16 platforms:

- alpha, amd64, armish, hp300, hppa, i386, landisk, loongson, mvme68k, mvme88k, sgi, socppc, sparc, sparc64, vax, zaurus.
OpenBSD... (cont.)

- 13 binary architectures:
  - alpha, amd64, arm, hppa, i386, m68k, mips64, mips64el, powerpc, sh, sparc, sparc64, vax.
OpenBSD… (cont.)

- W.I.P. platforms
  - aviion, hppa64, palm, solbourne.
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What is...a Heckethun?

- Hackathons do not have talks, or a specific schedule.
- People hack and discuss...
- ...and drink (Humppa!).
Hackathons

- General hackathon
- Mini hackathons
  - Hardware, network, ports, filesystem/uvm, routing.
- *HECKETHUNS ERE-A FUR STERTEENG SUMETHEEN OOR FEENISHING SUMETHEENG, NUT BUT. SU DUN’T BORK ZEE TREE-A! BORK BORK BORK!*
Ports hackathons

Adding Meat To OpenBSD Since 2004
Ports hackathons

- Yearly event.
- Very creative and productive atmosphere.
- No presentations.
- Just hacking, fun and beer...
...and wine!
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Common ancestor; the FreeBSD ape.

perl(1)

Smaller than both \{Free,Net\}BSD.

K.I.S.S.
pkg_add(1) (cont.)

- Power of combination.
  - Perl modules.
  - Generic make(1) targets.
  - Reuseable functions/code.
pkg_add(1) (cont.)

- Dependencies
  - BUILD_DEPENDS
  - RUN_DEPENDS
  - LIB_DEPENDS
  - REGRESS_DEPENDS
    - directory, [-multi], [flavor...]
  - WANTLIB
Everyone loves numbers, right?

- Ports tree size (in unzels):
  - 2001: 1016
  - 2003: 2095
  - 2005: 2855
  - 2007: 4084
  - 2009: 5440
  - 2010: 6303

- Fastest machine takes $\sim 36$ hours.

- Slowest machine takes several months; until someone aborts the build.
Snapshots

- Continuous building of packages.
- Machines should be building 24/7.
- Find and fix issues.
  - Yelling, but no bricking.
- Good testing for kernel and native toolchain
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The name says it all:

- Distributed Ports Builder.
Reincarnation of original dpb tool.

Build order
- Blockers built first.
- Large ports built first.
- Priming (expected) build sizes.
- Fix broken port while build is running.
Parallel building on multiple hosts
  - SSH (duh..)
  - Sharing distfiles.
  - Build arch. independent packages once.

Allows for twisted build clusters... (vax anyone?)
Version 4.2.1
  - Last GPLv2 version.
- C++ horror
  - libstdc++ vs. libestdc++
Switched
- amd64, sparc64.

W.I.P.
- alpha*, arm, hppa*, i386*, mips64(el), powerpc*, sh.
pkg_add(1) improvements

- Way more robust.
  - Incremental updates.
- Way faster.
  - Profiling.
  - Caching.
- Way better!
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OpenBSD ports doesn’t…

- ...have meta-packages.
- ...have pkglint.
OpenBSD ports doesn’t …

- …use buildlink.
- …need wrappers, shadow trees.
OpenBSD ports doesn’t…

- …have a WIP directory.
- …have enough ports developers..
OpenBSD ports doesn’t…

- ...track ports bugs, at all.
- ...have proper/finished pthreading.
OpenBSD ports doesn’t…

- …need bootstrapping.
  - ‘cvs co’ and build!
OpenBSD ports does...

- ...support one operating system.
- ...have Perl and X11 in the base system.
OpenBSD ports does...

- ...have Systrace protection.
- ....PLIST annotations.
OpenBSD ports does...

- ...have its own libtool (almost).
  - < 25% of GNU libtool’s size.
  - 1626 lines of readable Perl.
- ...have shared library control.
  - Stupid upstream is stupid.
OpenBSD ports does...

- have its own pkg-config.
- have irregular, but continuous snapshots.
OpenBSD ports does...

- ...have flavors.
- ...have multipackages.
OpenBSD ports does...

- ...have a Fake target (staged installation).
- ...keep things simple.
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Short overview of OpenBSD ports, with some history, improvements, and differences compared to pkgsrc.
Questions?