

# OpenBSD ports...what the heck?!

Jasper Lievisse Adriaanse  
*Jasper@OpenBSD.org*



pkgsrcon, Basel, May 2010

# Agenda

- 1 Introduction
- 2 Hackathons
- 3 `pkg_add(1)`
- 4 Recent developments
- 5 Differences with `pkgsrc`
- 6 Conclusion

# 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.
- 3<sup>rd</sup> party applications available via the ports system.
- Anoncvns, OpenSSH, strlcpy(3)/strlcat(3).
- One release every 6 months, regardless.

# OpenBSD... (cont.)

- 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.

# Agenda

- 1 Introduction
- 2 Hackathons**
- 3 `pkg_add(1)`
- 4 Recent developments
- 5 Differences with `pkgsrc`
- 6 Conclusion

# 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!*

## Adding Meat To OpenBSD Since 2004



# Ports hackathons

- Yearly event.
- Very creative and productive atmosphere.
- No presentations.
- Just hacking, fun and beer...

...and wine!



# Agenda

- 1 Introduction
- 2 Hackathons
- 3 pkg\_add(1)**
- 4 Recent developments
- 5 Differences with pkgsrc
- 6 Conclusion



- 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

# Agenda

- 1 Introduction
- 2 Hackathons
- 3 `pkg_add(1)`
- 4 Recent developments**
- 5 Differences with `pkgsrc`
- 6 Conclusion

- The name says it all:
  - Distributed Ports Builder.

# dpb3(1)

- Reincarnation of original dpb tool.
- Build order
  - Blockers built first.
  - Large ports built first.



## dpb3(1) (cont.)

- Priming (expected) build sizes.
- Fix broken port while build is running.

## dpb3(1) (cont.)

- 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. libstdc++

# GCC4 (cont.)

- 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!

# Agenda

- 1 Introduction
- 2 Hackathons
- 3 `pkg_add(1)`
- 4 Recent developments
- 5 Differences with `pkgsrc`**
- 6 Conclusion

# 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 it's 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 it's 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.

# Agenda

- 1 Introduction
- 2 Hackathons
- 3 `pkg_add(1)`
- 4 Recent developments
- 5 Differences with `pkgsrc`
- 6 Conclusion**

# Conclusion

- Short overview of OpenBSD ports, with some history, improvements, and differences compared to pkgsrc.

Questions?

Questions ?