FreeBSD: 5 years of pkg

A end less journey

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Once upon a time... the binary packages
昔々...バイナリパッケージ

From the package point of view

- ▶ No binary upgrade
- ▶ Inconsistencies
- ▶ Lots of failing scripts
- ▶ No signing support
- ▶ No predictable updates
- ▶ Sacrifice of chicken mandatory
- ▶ DO NOT EVER TOUCH IT AGAIN WHEN YOU MANAGE TO INSTALL

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Once upon a time... the binary packages
昔々...バイナリパッケージ

Other OSes:

- NetBSD:
    - pkg_tools == pkg_install++
    - no library
    - pkgin tight to pkg_tools
- OpenBSD:
    - pkg_add: full featured
    - closely tight to OpenBSD's ports tree
    - perl (not in base on FreeBSD)
- Linux:
    - apt/dpkg: full featured, GPLv2, no library
    - yum/rpm: full featured, GPLv2, no library, slow
    - libsolv: very good solver, MIT, strict semantic not ports friendly

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Once upon a time... the ports tree
昔々... ports ツリー

What about the ports tree:

- ▶ fragile (no destdir/stagedir)
- ▶ work to some extent
  (thanks portmaster/portupgrade)
- ▶ inconsistent and creative:
    - ▶ script could be found in any language
    - ▶ 20 ways to badly do one thing
    - ▶ 8 sides wheels keeps being reinveted
- ▶ Better than web archive
- ▶ Overlink all over the place (hi libtool)
- ▶ No unicity to identify packages

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Principles
原則

- ▶ Full featured library
- ▶ One command to rule them all
- ▶ Simple UI
- ▶ Only depend on base
- ▶ Fast enough with 25k packages
- ▶ BSD license
- ▶ Portable
- ▶ Extensible (ucl keywords, plugins)

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Principles
原則

- Ports friendly
- Binary centric
- Sanboxed
- Signing support
- Cross installation friendly
- Rethink {pre,post}-{install,deinstall} script
- Event based

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History
歴史
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- Sept. 2010: First commit
- March 2011: pkgng 0.1-alpha1
- January 2012: 1.0 beta1: pkg enters in the ports tree
- August 2012: 1.0
- October 2012: default on -CURRENT
- June 2013: 1.1
- November 2013: 1.2
- January 2014: 10.0 on pkg
- July 2014: 1.3
- September 2014: pkg_install EOL
- December 2014: 1.4

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History
歴史
DragonflyBSD

- December 2012: Dports creation
- January 2013: Announcement
- April 2013: 3.4 Support both pkg and pkgsrc
- November 2013: 3.6 pkg only

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History
歴史
Others

- 2014: Initial support for OS X
- 2014: Initial support for Linux
- 2015: Initial support for NetBSD/EdgeBSD

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Mistakes
間違い

- Started as a pet project
- Not enough strong directions
- Regression/Unit tests added very late
- Too much compromise accepted
- Lack of "project"communication

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Improvements
改善点

- ▶ Cleaning up/removing all the compatibility stuff
- ▶ More test driven developement
- ▶ Reduce the scope of what pkg(8) should do
- ▶ Focus on stabilising what we have
- ▶ Attract new developers
- ▶ Give more clear directions, ROADMAP

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Roadmap
ロードマップ

- Provides/Requires
- Flexible dependencies
- sub packages (ports related)
- flavours/alternatives (ports related)
- List of supported ABI
- Maybe extensibility: plugins? lua? duktape? jimtcl?
- Transactions
- More regression tests
- 3rd party repositories:
    - ports tree
    - yum (aka linux packages)
    - CPAN

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New in pkg 1.5
pkg 1.5 変更履歴

- Improved support for NetBSD/EdgeBSD
- Initial support for OSX
- Extended credential support in plist (support for flags)
- 40+ new regression tests
- Lots of bugfixes
- Custom keywords can have arguments in plist
- Initial support for provides/requires
- Public API now C++ friendly
- Support to package files with immutable flags as a user
- Initial support for cross installation

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Packaging base
-> パッケージ・ベース

Users expectations

- Keep base as a one true entity
- Fine grain package to reduce security updates
- Most options in separate packages
- Development tools in separate packages
- Debug packages
- Ability on only install runtime things (no .a, no .h etc)
- Ability for developers to provide a custom repository to allow users to test their changes. Example: a new libc++
- 3 way merge to handle /etc files
- Ability to create packages as root and user

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Packaging base
パッケージ・ベース
What and when

- Packages for RELEASES and security fixes
- Packages for STABLE branches
- Packages for HEAD
- Starting from FreeBSD 11.0-RELEASE

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Some links
いくつかのリンク

- pkg:
  `https://github.com/freebsd/pkg`

- issues:
  `https://github.com/freebsd/pkg/issues`

- introduction:
  `https://www.freebsd.org/doc/handbook/pkgng-intro.html`

- packaging base:
  `https://svnweb.freebsd.org/base/projects/release-pkg`

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Thanks
ありがとう
ございました