



# pkgng: replacing pkg\_install

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# Problems with pkg\_install

Hard to maintain

lack of features:

- no binary upgrade
- missing metadatas
- no real reverse dependency calculation
- no management for configuration files

Known to be broken features: custom prefix

Dirty workaround: +REQUIRED\_BY

Doesn't match the level of features of the ports

slow



# Goals of pkgng

Simple maintainable code

Compatibility with the port infrastructure

Feature set on par with pkg\_install  
(not the broken ones)

Have modern package management features:

- repositories
- search
- binary upgrades
- ...

Do not reinvent the wheel



# What changes

New backend

New package format

New repository format

New design: libpkg

New frontend



# New backend study

## Why:

- No fast complex querying
- +REQUIRED\_BY

## Candidate:

- New flat files
- cdb
- bdb (1.85 from libc)
- sqlite
- some Ancient Ones magic mixing candidates

## Winner:

SQLite



# New package format

## What remains:

- Tar format
- compressed (but with new xz option by default)
- +<name> for special files

## What changes:

- No more: +DESC, +COMMENT +CONTENT
- New +MANIFEST file in plist format containing all the metadatas
- Full path for files
- new +\*UPGRADE scripts
- new +PRE +POST scripts
- new configuration files support: \*.pkgconf



# +MANIFEST

Contains all the metadas concerning a package

- @name
- @origin
- @version
- @arch
- @osversion
- @www
- @comment
- @flatsize
- @option
- @dep
- @conflict
- @maintainer
- @exec
- @unexec
- @prefix
- @file
- @user (?)
- @group (?)



# New repository format

Bunch of packages with no mandatory hierarchy

New metadata file: `repo.txz` containing

- sqlite database
- RSA signature file

Database content:

- all metadatas from the packages
- sha256 digest of each packages
- sizes of the package: flat and compressed

Self hosting:

No ports tree required to build or to use it





# New frontend: pkg

One cli to rule them all: pkg

sub-commands:

- register: to register package from the ports
- info: query information from local db
- delete: remove installed packages
- create: create binary package in a chroot
- which: find which package owns a file
- update: fetch a new version of the remote db
- upgrade: proceed a full upgrade of the packages
- add: install or upgrade a given package
- search: query the remote db
- repo: create a package repository



# What will change for porters

Integration steps :

1: nothing (compatibility really works)

2: cleanup

- no more need to `${CAT} ${PKG_MESSAGE}`
- no more need to duplication post-install scripts

3: possible fakeroot for better QA

- pkg register support fakeroot (-i inputdir)
- only files in plist will be installed for real
- expect more cleanup and less patches for porters



# Guilty list

NetBSD's pkgin: it all started there

Julien Laffaye: Co-author from the beginning

Philippe Pepiot: Huge contribution

All contributors and reviewers



# PKGNG: Thanks

**Questions ?**