



New package manager for FreeBSD

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Why pkgng?

usr.sbin/pkg_install/add/perform.c:

```
/*  
 * This is seriously ugly code following. Written very fast!  
 * [And subsequently made even worse.. Sigh! This code was just born  
 * to be hacked, I guess.. :) -jkh]  
 */
```

No safe upgrade support

Missing metadata

No repository support

No fine dependency tracking

No modern binary package management

Many others



What is pkgng?

- * New package format
- * New local package database
- * Simple and easy to use library libpkg(3)
- * Simple and easy to use pkg(1)
- * Binary repository(ies) support
- * Binary upgrade support
- * Current ports tree support
- * Ready to help improving the ports tree
- * Help modernising the package management on FreeBSD



New package format

- * Can be tar, tgz, tbz or txz (default to txz)
- * One single metadata file: +MANIFEST
- * New format for metadata: YAML
- * Able to package empty directories
- * New splitted pre/post (install/deinstall) scripts
- * New upgrade scripts
- * Abi aware (freebsd:10:arm:32:el:oabi:softfp)



local package database

- * SQLite
- * Easy and fast reverse dependencies calculation
- * Easy to backup
- * Safe (heavy usage of sql transaction)
- * Contain all metadata
- * Extensible
- * Upgrade possible



libpkg(3)

- * Full featured
- * High level
- * C
- * Safe
- * Simple
- * The API is not yet consider as stable

Commands supported:

add	Registers a package and installs it on the system
audit	Reports vulnerable packages
autoremove	Removes orphan packages
backup	Backup and restore the local package database
check	Check for missing dependencies and database consistency
clean	Cleans old packages from the cache
create	Creates software package distributions
delete	Deletes packages from the database and the system
fetch	Fetches packages from a remote repository
help	Displays help information
info	Displays information for installed packages
install	Installs packages from remote package repositories
query	Query information for installed packages
search	Performs a search in remote package repositories
set	Modify local database informations
register	Registers a package into the local package database
repo	Creates a package database repository
shell	Open a debug shell
shlib	Displays which package links against a specific shared library
update	Updates remote package repository databases
updating	Displays UPDATING information for a package
upgrade	Performs upgrades of package software distributions
version	Summarize installed versions of packages
which	Displays which package installed a specific file



pkg info -f xpdf

```
Name      : xpdf
Version   : 3.03
Origin    : graphics/xpdf
Prefix    : /usr/local
Categories : print graphics
Maintainer : araujo@FreeBSD.org
WWW       : http://www.foolabs.com/xpdf/
Comment   : Display PDF files, and convert them to other formats
Options   :
    LIBPAPER: off
    TYPE1: on
    X11: on
Flat size  : 8 MB
Description :
Xpdf is a viewer for Portable Document Format (PDF) files.  These are
also sometimes also called 'Acrobat' files, from the name of Adobe's
PDF software.

It can also convert PDF input to ps, text, and info formats; and
split out fonts and images.

WWW: http://www.foolabs.com/xpdf/
```



pkg search -f bogofilter

```
Name      : bogofilter-tc
Version   : 1.2.2_2
Origin    : mail/bogofilter-tc
Prefix    : /usr/local
Categories : mail
Maintainer : mandree@FreeBSD.org
WWW       : http://bogofilter.sourceforge.net/
Comment   : Fast, teachable, learning spam detector
Options   :
    GSL: on
    UNICODE: on
Flat size  : 974 kB
Pkg size   : 218 kB
Description :
Bogofilter is a trainable email spam detector.
```

Bogofilter takes an email message or other text on standard input, parses it into words, does a statistical check against databases of "good" and "bad" words, and returns a status code indicating whether or not the message is spam. Bogofilter decodes base64 or quoted-printable encoded texts and ignores non-text attachments and HTML comments.

The supported database backends are Berkeley DB, QDBM and SQLite3.

WWW: <http://bogofilter.sourceforge.net/>



Smart (r)queries

Print all the package maintain by myself:

```
$ pkg query -e "%m=bapt@FreeBSD.org" "%n-%v: %c"  
dfc-2.5.0: Display file system space usage using graph and colors  
jbig2dec-0.11: Decoder implementation of the JBIG2 image compression format  
zsh-4.3.17_1: The Z shell
```

Also available for remote (just use pkg rquery)

```
$ pkg rquery -e "%m ~ *bapt* && %n != fossil" "%n-%v"  
i3status-2.4  
jbig2dec-0.11  
pekwm-0.1.14,1  
xsw-0.3.5_2  
yajl-2.0.1  
zsh-4.3.17_1
```



Repository(ies) support

- * SQLite
- * SSL signature
- * multiple possible
- * Contains most metadata
- * XZ compressed
- * searchable



Binary install/upgrade

- * both available on install and upgrade subcommand
- * fast (only remove files that are not present in the new script)
- * safe: internal integrity checking
- * safe: able to deal with package split
- * RCng support (not activated by default)

How to upgrade your system?

```
$ pkg update  
$ pkg upgrade -y
```



Ports Tree Support

- * 22100 successful packages is the highest pkgng score so far
- * easy plist format extensions: yaml

example: /usr/ports/Keywords/fontdir.yaml

```
actions: [dirrm]
post-install: |
  mkfontdir "%@"
  mkfontscale "%@"
  fc-cache
post-deinstall: |
  rm -f "$@"/fonts.cache
  rm -f "$@"/fonts.dir
```

- * Real stage ready



Roadmap

For 1.0:

- * MFC /usr/sbin/pkg bootstrap to 9-STABLE
- * Improve documentation
- * Improve user messages (error, warnings, etc.)
- * Fix as many bugs as possible

For Future:

- * capsicum (and security in general)
- * Better arch support (noarch etc)
- * abstract/alternative packages (e.g. "provide http_server")
- * subpackages
- * multi ABI packages



Introduction to pkgng

Questions ?