pkgng: New package tools

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Why changing

- 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]
 */
```

- usr.sbin/pkg_install/delete/perform.c:

```
/* This is seriously ugly code following.  Written very fast! */
```

- no safe upgrade possible

- no clean repository handling

- hardly extensible

- lack features provided by ports

- lack features to help improving ports

What is pkgng

- binary package management tool (ala apt/yum)

- library to handle packages (libpkg)

- very simple and powerful default UI (pkg)

- new binary package format

- fully compatible with ports

- easy manual package creation

- safe upgrade possible

Binary management?

- updating the repository informations
```
$ pkg update
http://pkgng.etoilebsd.net/eeepc/repo.txz     100%  157KB 157.1KB/s 157.1KB/s  00:00
```

- upgrading
```
$ pkg upgrade
```

- installing
```
$ pkg install libreoffice
```

- cleaning
```
$ pkg autoremove
```

- searching for remote packages
```
$ pkg search chromium
chromium-13.0.782.215: A mostly BSD-licensed web browser based on WebKit and Gtk+
```

What else©?

- register an already installed port
```
$ pkg register
```

- query information from installed packages

    user friendly:
```
$ pkg info
```

    script friendly:
```
$ pkg query "I am %n version %v" chromium
I am chromium version 13.0.782.215
```

- native support for jail(8) and chroot(8)
```
$ pkg -j myjailname info -a
$ pkg -c /path/to/my/chroot info -a
```

- experimental multi repositories support

New package format

- more metadata:

```
$ pkg search -f chromium
Name         : chromium
Version      : 13.0.782.215
Origin       : www/chromium
Prefix       : /usr/local
Categories   : www
Licenses     : MPL | LGPL21 | BSD
Maintainer   : chromium@FreeBSD.org
WWW          : http://www.chromium.org/Home
Comment      : A mostly BSD-licensed web browser based on WebKit and Gtk+
Options      :
         CODECS: on
         GCONF: on
         VPX: on
Flat size    : 74 MB
Pkg size     : 19 MB
Description  :
Chromium is an open-source browser project that aims to build a safer,
faster, and more stable way for all users to experience the web.

The Chromium website contains design documents, architecture overviews,
testing information, and more to help you learn to build and work with
the Chromium source code.

WWW: http://www.chromium.org/Home
```

- a single serialisable manifest (YAML)

- full path files

- upgrade scripts

libpkg

- simple and consistent API

- event driven messages

- full featured:
  * everything to deal with packages
  * everything to create packages
  * everything to deal with repositories
  * everything to create repositories

- easy-to-write binding (experimental lua)

libpkg

- easy to use:
  - * `create.c`: 158 LoC
  - * `install.c`: 132 LoC
  - * `upgrade.c`: 123 LoC

- Thread safe

- clean and simple code base

- easily extensible

New local database

uses SQLite to store anything

- reliable

- transactions

- ACID

- high level language

- fast

New remote(s) database

uses SQlite to store anything but files

can be signed using RSA (SHA256)

tar using xz compression (small size)

planed an optional files database

easy to create:
```
$ pkg repo my_folder [my_rsa_key]
```

Compatibility with ports

- work out of the box with 95+% of the ports tree

- all the magic is in bsd.pkgng.mk

- what is not working
  * @exec/unexec in the middle of the plist
  * non sh scripts (PRs are open to fix the few)
  * buggy plist that are now detected (mostly fixed)

- what works
  * Everything else

Open tasks

- Safer for installation/upgrades
  * detect unspecified conflicts early
  * better ordering of the packages

- code review, in particular the SSL usage

- capsicum (jonathan@? :))

- may be a pkg rquery

- packagekit backend

- write a migration plan!

http://wiki.freebsd.org/pkgng

https://github.com/pkgng/pkgng

questions?