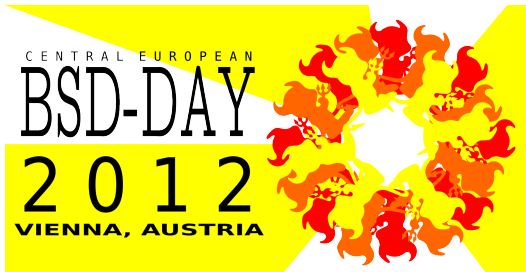


# New features in and around the FreeBSD portstree

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# common problem when working with packages

Install an additional package:

```
# pkg_add thunderbird-12.0.tbz
pkg_add: could not find package perl-5.12.4_4 !
pkg_add: could not find package xcb-util-renderutil-0.3.8 !
pkg_add: could not find package gtk-update-icon-cache-2.24.6 !
```

Workaround: use force flag and see what happens



## three problems here

- ▶ package tools
- ▶ package dependencies
- ▶ packages are best-effort with no predictable date



# pkgng - 1

Next-generation package framework

<http://wiki.freebsd.org/pkgng>

- ▶ one tool with commands: `pkg <command>`
- ▶ multiple man pages: `pkg(8)`, `pkg-install(8)`, `pkg-query(8)`, ...

pkgng is not:

- ▶ a ports management tool (doesn't know how to build a port)
- ▶ a replacement for `portupgrade/portmaster`



## pkgng - 2

pkgng is:

- ▶ a replacement for the old pkg tools
- ▶ a tool to query/manage installed packages
- ▶ a tool to deal with binary packages
- ▶ a tool to upgrade/install packages from a remote repository
- ▶ a library that provides all the package management



# new package format

- ▶ xz compressed packages (.txz)
- ▶ metadata in +MANIFEST file

## Example:

what a +MANIFEST file contains



# local database

- ▶ packages are registered in a local SQLite database
- ▶ stored in `/var/db/pkg`



# repository

- ▶ xz compressed sqlite database with information about the available packages
- ▶ public repository available: <http://pkgbeta.freebsd.org>





# working with pkgng

git repository: <https://github.com/pkgng/pkgng>

Install from ports:

```
# cd /usr/ports/ports-mgmt/pkg && make install clean
```



# converting an existing system

Tool to convert available:

```
# pkg2ng
```

Enable pkgng in `/etc/make.conf`

```
WITH_PKGNG=yes
```

- ▶ you may want to delete the old directories in `/var/db/pkg`
- ▶ don't delete `/var/db/pkg/local.sqlite`

**Demo:**

converting an existing system and basic pkgng tasks



# bootstrapping an up to date CURRENT

- ▶ no portstree needed
- ▶ wrapper in base to bootstrap pkgng (src/usr.sbin/pkg)
- ▶ installs a default /usr/local/etc/pkg.conf

Demo:

bootstrap pkgng



# portmaster with pkgng

Patch available:

<https://raw.githubusercontent.com/pkgng/pkgng/master/ports/portmaster.patch>

Enable pkgng support in `/usr/local/etc/portmaster.rc`

```
# use_pkgng=yes
```

Can even update pkgng itself:

```
# portmaster pkg-1.0.b11
```



## package sets

- ▶ packages of a ports snapshots
- ▶ different retention time

Example on <http://pkgbeta.freebsd.org/freebsd-10-i386/>

Name	Last Modified	Size	Type
2012-04-13	2012-Apr-13	11:41:48	Directory
2012-04-26	2012-Apr-26	14:03:07	Directory
2012-04-29	2012-Apr-30	00:12:59	Directory
latest	2012-Apr-30	00:12:59	Directory



## possible package set policy

- ▶ weekly package sets. EoL: 2 months
- ▶ monthly package sets. EoL: 12 months



# poudriere

Usage for:

- ▶ test package production on FreeBSD
- ▶ bulk build ports for FreeBSD

Features:

- ▶ build packages for different versions of FreeBSD
- ▶ build i386 packages on an amd64 host
- ▶ create package layout identical to the official mirrors
- ▶ only depends on base (ZFS, jails), no database required



# build packages with poudriere - 1

Install poudriere

```
# pkg install poudriere
```

Create poudriere configuration: `/usr/local/etc/poudriere.conf`

Add a jail and a portstree

```
# poudriere jail -c -v 8.2-RELEASE -a amd64 -j 82amd64
```

```
# poudriere ports -c
```





## build packages with poudriere - 2

For pkgng packages add WITH\_PKGNG=yes to the jails make.conf

Define ports to build and build them

```
# echo "www/firefox" > ~/pkglist
# poudriere bulk -f ~/pkglist -j 82amd64
```

<http://fossil.etoilebsd.net/poudriere/doc/trunk/doc/index.wiki>

Demo:

poudriere with pkgng repository creation



# tinderbox with pkgng support

- ▶ pkgng support in Tinderbox HEAD and TINDERBOX\_3\_X
- ▶ tinderbox-devel port includes pkgng support (ports/ports-mgmt/tinderbox-devel)

Support for pkgng can be enabled by adding these lines to the portstree environment in scripts/etc/env:

```
export WITH_PKGNG=yes
export PKGSUFFIX=.txz
```



# tinderbox hook to create pkgng repository

Hook to create pkgng repository available:

tinderbox/scripts/contrib/hooks/create-pkgng-repo

```
# cd /usr/local/tinderbox/scripts
# chmod 755 contrib/hooks/create-pkgng-repo/create-pkgng-repo.sh
# ./tc updateHookCmd -h postPortBuild -c \
  /pathtotindi/contrib/hooks/create-pkgng-repo/create-pkgng-repo.sh
```



# subversion for ports - 1

- ▶ easier tagging
- ▶ just in time repo copies
- ▶ why Subversion and not another VCS?
- ▶ concerns regarding repository growth
- ▶ migration of history
- ▶ CVS exporter



## subversion for ports - 2

- ▶ test repository set up: `svn.chruetertee.ch`
- ▶ repository is open for all committers
- ▶ documentation for committers:  
`http://wiki.freebsd.org/PortsSubversionPrimer`
- ▶ tasklist: `http://wiki.freebsd.org/PortsSVN`
- ▶ timeline



## Next-generation options code

- ▶ an option as two variables: WITH\_FOO and WITHOUT\_FOO
- ▶ value of variable might not be checked
- ▶ usage not consistent

Patch available:

<http://people.freebsd.org/~bapt/optionsng-last.diff>



# option types and features

- ▶ simple options (on or off)
- ▶ multi options (>1)
- ▶ single options (only 1 out of multiple)
- ▶ options can have an optional description
- ▶ maintainer options
- ▶ system wide options

Demo:  
optionsng



# conclusion

- ▶ huge progress and improvements in 2012
- ▶ stay tuned and try it out





Thank you for your attention!

*Questions?*

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<http://people.FreeBSD.org/~beat/bsdday2012-ports.pdf>

