

# pkgsrc for users and developers

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# WTF is pkgsrc ?

- aka “package source”
- NetBSD packaging system for 3rd party applications
- Initially based on FreeBSD ports system (back in 1997), heavily modified since
- Now the primary packaging system for a number of OS:
  - NetBSD
  - DragonflyBSD
  - MirBSD (See Benny's presentation for more details)
  - Minix 3
- Usable on quite a lot of OS:
  - Mac OS X
  - Solaris and derivatives
  - Linux
  - Haiku
  - Windows
- 12000 or so packages

# pkgsrc, from the user perspective. Using binaries

- 4 pkgsrc branches a year. Latest is 2011Q4.
- Binary packages provided by TNF for each branch:
  - Tier 1 ports only (i386, amd64, sparc64)
  - Updated for build and security fixes
- Repositories hosted on TNF \*ftp servers
- Installable via pkg\_add tool from base system
- MUCH more flexible tool available: pkgtools/pkgin.
  - See iMil's talk for more details

# pkgsrc, from the user perspective. Compiling from source.

- Packages organised in categories
- To install a package:
  - `cd category/package`
  - `make USE_DESTDIR=yes stage-install=yes && sudo make install`
- Infrastructure takes care of all dependencies handling
- Searching for a specific package ?
  - `pkgtools/pkgse`
  - `pkgsrc.se` web frontend

# pkgsrc from the developer perspective

- Bootstrap
  - To properly setup environment and tools. Not required on NetBSD.
- Tools
  - See pkgtools/
    - url2pkg – creates Makefile stub
    - pkglint – checks for best practices
    - pkgdiff – generates proper patches

# Porting graphics/shotwell to pkgsrc

- “Next-generation” photo management software for Linux
- Written in Vala, using external libraries like libgee, libgphoto2 and glib2



# Porting graphics/shotwell to pkgsrc

- First step: update all related dependencies:
  - Vala and libgee

Fairly trivial, minor adjustments to Makefiles
- Package and import missing dependencies:
  - Libraw – inspired by OpenBSD's (especially raw.pc)
  - Libgexiv2

# Porting graphics/shotwell to pkgsrc

- Create makefile stub using pkgtools/url2pkg:  
url2pkg <http://yorba.org/download/shotwell/0.7/shotwell-0.7.2.tar.gz>
- Results in proper package structure and files
- Tarball is fetched and distinfo computed
- Complete Makefile with relevant info:
  - COMMENT
  - MAINTAINER
  - LICENSE
- Adjust HOMEPAGE (Well, I should have done that)



# Initial graphics/shotwell/Makefile

```
# $NetBSD$  
#  
  
DISTNAME=          shotwell-0.7.2  
CATEGORIES=        wip  
MASTER_SITES=     http://yorba.org/download/shotwell/0.7/  
  
MAINTAINER=        gls@NetBSD.org  
HOMEPAGE=          http://yorba.org/download/shotwell/0.7/  
COMMENT=           Shotwell is a photo organizer for the GNOME desktop  
LICENSE=           gnu-lgpl-v2.1  
  
PKG_DESTDIR_SUPPORT= user-destdir  
  
# url2pkg-marker (please do not remove this line.)  
.include "../mk/bsd.pkg.mk"
```

# Porting graphics/shotwell to pkgsrc

- Patching required (thanks to [landry@openbsd](mailto:landry@openbsd)):
  - Homemade Bash configure script needs some love:
    - Our m4 doesn't like GNU extensions
    - Our libraw package has a proper pkg-config file, so use it.
    - Gudev is not there for us.
  - As a consequence of the last point, we had to remove the related part of src/CameraTable.vala (dealing with automounting cameras). It looks like the `define=NO_CAMERA` in Makefile is not enough.

# Porting graphics/shotwell to pkgsrc

- Dependencies:
  - USE\_TOOLS (build-time depends): bash, pkg-config, gmake
  - Include the relevant buildlink files for runtime dependencies
    - Infrastructure will take care of proper paths handling.
- Specific treatments
  - .desktop files
  - GConf schemas

# Final graphics/shotwell/Makefile

```
# $NetBSD: Makefile,v 1.1 2010/11/15 19:04:53 gls Exp $
#
DISTNAME=                shotwell-0.7.2
CATEGORIES=               graphics
MASTER_SITES=            http://yorba.org/download/shotwell/0.7/
EXTRACT_SUFX=            .tar.bz2

MAINTAINER=              pkgsrc-users@NetBSD.org
HOMEPAGE=                http://yorba.org/download/shotwell/0.7/
COMMENT=                 Shotwell is a photo organizer for the GNOME desktop
LICENSE=                 gnu-lgpl-v2.1

PKG_DESTDIR_SUPPORT=     user-destdir

HAS_CONFIGURE=           yes
USE_TOOLS+=              gmake bash

CONFIG_SHELL=            bash
CONFIGURE_ARGS+=        --prefix=${PREFIX}
CONFIGURE_ENV+=          --define=NO_CAMERA

REPLACE_SH+=            minver configure libraw-config

GCONF_SCHEMAS=           shotwell.schemas
INSTALLATION_DIRS+=     share/gconf/schemas

post-install:
    ${INSTALL_DATA} ${WRKSRCSRC}/misc/shotwell.schemas \
        ${DESTDIR}${PREFIX}/share/gconf/schemas

.include "../../databases/sqlite3/buildlink3.mk"
.include "../../devel/GConf/schemas.mk"
.include "../../devel/libgee/buildlink3.mk"
.include "../../devel/libgphoto2/buildlink3.mk"
.include "../../graphics/hicolor-icon-theme/buildlink3.mk"
.include "../../graphics/libexif/buildlink3.mk"
.include "../../graphics/libgexiv2/buildlink3.mk"
.include "../../graphics/libraw/buildlink3.mk"
.include "../../lang/vala/buildlink3.mk"
.include "../../net/libsoup24/buildlink3.mk"
.include "../../sysutils/desktop-file-utils/desktopdb.mk"
.include "../../sysutils/dbus-glib/buildlink3.mk"
.include "../../textproc/libxml2/buildlink3.mk"
.include "../../www/webkit-gtk/buildlink3.mk"
.include "../../x11/gtk2/buildlink3.mk"
.include "../../x11/libunique/buildlink3.mk"
.include "../../mk/bsd.pkg.mk"
```

# Porting graphics/shotwell to pkgsrc

- Test, test, test, test!
- Have external pairs of eyes look at the package
  - Thanks drochner@ for the reviews
- Final review
- Import
- Cheers!

# Conclusion

- 25 revisions to the Makefile so far
- Waiting for shotwell 0.12 release, which will switch to GTK3 and libraw 0.14
- **Always check what other BSDs are doing when working on a package**
  - **Some OpenBSD patches have been reused**
  - **FreeBSD has reused some of ours**