pkgsrc for users and developers

Guillaume Lasmayous
gls@NetBSD.org

FOSDEM
Brussels, Feb. 5 2012
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)
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

PKGDESTDIR_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):
  - 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
#
DISTNAME=             shotwell-0.7.2
CATEGORIES=           graphics
MASTER_SITES=   http://yorba.org/download/shotwell/0.7/
EXTRACT_SUFX=   .tar.bz2
MAINTAINER=             pkgrsc-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) $(WRKSRC)/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/valet/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