

What's a good Package?

Cautionary tales and true beauty ;-)

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Intro

- Beauty lies in the eye of the beholder:
 - More concretely in those of the Factory review team ;-)
 - There's no black'n'white, take this as general guidelines
- It's always 'bout the same stuff:
 - Missing bits (changes, spec headers, sections, ...)
 - Outdated bits (workarounds for RPM heritage, ...)
 - Not quite correct stuff (i.e. there's a better macro for it!)
 - Plain madness (we'll see...)

Good packages...

- ... build!
- At least against the project (repo) you're submitting too
- For Factory, this is an instand reject

Build Status 		
 SLES_9	 i586	unresolvable
	 x86_64	unresolvable
 SLE_10	 i586	failed
	 x86_64	failed
 SLE_11	 i586	failed
	 x86_64	failed
 bleeding_edge_python...	 i586	unresolvable
	 x86_64	unresolvable
 bleeding_edge_python...	 i586	failed
	 x86_64	failed
 bleeding_edge_python...	 i586	failed
	 x86_64	failed
 openSUSE_11.3	 i586	failed
	 x86_64	failed
 openSUSE_11.4	 i586	failed
	 x86_64	failed
 openSUSE_Factory	 i586	failed
	 x86_64	failed

Changelogs - Questionable

- Long time classics:
 - “Fixed build”
 - “Update to version \$BLA”
 - “Add BuildRequires \$YEAH!”
 - “Updated description”
 - “Removed obsolete linker flags”
- Everyone does that, although we all know better :-)

Changelogs - Mediocre

+Wed Sep 14 07:49:59 UTC 2011 - [REDACTED]

+

+- do not build ctcs for 12.0+

+

+-----
+Sat Sep 10 07:56:02 UTC 2011 - [REDACTED]

+

+- fix build with newer ld

+

+-----

Spec file license headers

- We need legalese (ask the lawyers):
 - A copyright line (hey, it was you doing the hard work)
 - License statement (usually the same as the tarball)

- Like this:

```
#
# spec file for package ██████████
#
# Copyright (c) 2011 SUSE LINUX Products GmbH, Nuernberg, Germany.
#
# All modifications and additions to the file contributed by third parties
# remain the property of their copyright owners, unless otherwise agreed
# upon. The license for this file, and modifications and additions to the
# file, is the same license as for the pristine package itself (unless the
# license for the pristine package is not an Open Source License, in which
# case the license is the MIT License). An "Open Source License" is a
# license that conforms to the Open Source Definition (Version 1.9)
# published by the Open Source Initiative.
#
# Please submit bugfixes or comments via http://bugs.opensuse.org/
#
```


Indent your spec files

- Mostly about consistency and readability
- You wanna get thru review fast, don't ya?

```
-Requires:      yast2-core >= 2.18.0 yast2 >= 2.18.7 yast2-libyui >= 2.18.7
-Requires:      yast2-dbus-client
+Name:          yast2-storage
+Version:       2.21.2
+Release:       0
+
+
+BuildRoot:     %{_tmppath}/%{name}-%{version}-build
+Source0:       yast2-storage-2.21.2.tar.bz2
+
+prefix:        /usr
+
+Group:         System/YaST
+License:       GPL v2 or later
+BuildRequires: blocxx-devel boost-devel gcc-c++ libxcrypt-devel openssl-devel sablot swig
+BuildRequires: docbook-xsl-stylesheets doxygen libxslt perl-XML-Writer sgml-skel update-de
+BuildRequires: libstorage-devel >= 2.21.3 yast2 >= 2.19.4 yast2-core-devel >= 2.18.1 yast2
+BuildRequires: yast2-testsuite >= 2.19.0 yast2-perl-bindings
+Requires:      yast2-perl-bindings perl = %{perl_version}
+Requires:      yast2-core >= 2.18.3 yast2 >= 2.19.4 yast2-libyui >= 2.18.7
+Requires:      yast2-dbus-client
%ifarch s390 s390x
-Requires:      yast2-s390
+Requires:      yast2-s390
%endif
-PreReq:        %fillup_prereq
+PreReq:        %fillup_prereq
```

Shell scripting in spec files

- Perfectly fine, but don't overuse yer l33t skillz!
- KISS:

```
for f in "module/idoutils/config/ido2db.cfg-sample.in" \  
        "module/idoutils/config/idomod.cfg-sample.in"; do  
    sed -e "s|@localstatedir@/ido2db.lock|${_localstatedir}/run/${name}/ido2db.pid|g; \  
        s|@localstatedir@/ido.sock|${_localstatedir}/spool/${name}/ido2db.sock|g;" \  
        "$f" > "$f.new"  && mv "$f.new" "$f"  
done
```

```
for f in `find . -type f`; do  
    F=`mktemp temp.XXXXXX`  
    sed "s=/usr/local/icinga/var/rw=/var/spool/icinga/=; \  
        s=/usr/local/icinga/libexec/eventhandlers=${_prefix}/lib/nagios/plugins/eventhandlers=; \  
        s=/usr/local/icinga/test/var=/var/log/icinga=" ${f} > ${F}  
    mv ${F} ${f}  
done
```

Comments don't hurt!

```
%install
# binaries
install -D -m 0755 source/crawl ${buildroot}/${_bindir}/crawl
install -D -m 0755 source/crawl-sdl ${buildroot}/${_bindir}/crawl-sdl
# man pages
install -D -m 0644 docs/crawl.6 ${buildroot}/${_mandir}/man6/crawl.6
# documentation
install -d ${buildroot}/${_docdir}/${name}
install -m 0644 docs/{arena, changelog, keybind, key_changes, ssh_guide}.txt
cp -a docs/develop docs/license ${buildroot}/${_docdir}/${name}
# those are needed ingame, therefore they move elsewhere
install -d ${buildroot}/${_datadir}/${name}/docs
install -m 0644 README.txt ${buildroot}/${_datadir}/${name}
install -m 0644 docs/{aptitudes, crawl_manual, macros_guide, options_guide,
# common data
cp -a source/dat ${buildroot}/${_datadir}/${name}/dat
# config
cp -a settings ${buildroot}/${_datadir}/${name}/settings
#install -m 755 -d ${buildroot}/${_sysconfdir}/${name}
#touch ${buildroot}/${_sysconfdir}/${name}/crawlrc
# icon and desktop file
install -D -m 0644 source/dat/tiles/stone_soup_icon-32x32.png ${buildroo
# saves directory
install -d ${buildroot}/${_localstatedir}/games/${name}/morgue
install -d ${buildroot}/${_localstatedir}/games/${name}/saves
chmod -R 0775 ${buildroot}/${_localstatedir}/games/${name}
```

Distro-specifics

- Try to wrap into %if checks:
 - Distro-specific macros (like %suse_update_desktop_files)

```
Requires:          python-distribute
%if 0%{?suse_version}
%py_requires
%if 0%{?suse_version} > 1110
BuildArch:         noarch
%endif
%endif
- . . . . .
```

- Differing BuildRequires, %defines, sections,...

Some do's

- Use %config(noreplace) for stuff in /etc
- README, AUTHORS, COPYRIGHT, LICENSE belong into the base package!
- Don't package INSTALL, PKG-INFO, META.INF, ...
- Put **big** documentation into separate package:
 - Name it \$FOO-doc (%package doc)
 - Recommend/suggest the base package (suse-specific, use %if)
- The last line of every package is an empty %changelog section

Preppy style

- Fix tarball issues in the %prep section:

```
%prep
%setup -q -n pyserial-#{version}
sed -i "1d" serial/{serialposix,__init__}.py # Fix non-executable scripts
sed -i "s/\r//" examples/port_publisher.py # Fix EOL encoding
-- . . .
```

- Spot the comments?

Don't list each and every file

- Less is (often) better:
 - Use globs like
*%doc %[_mandir]/man?/**
 - %exclude often helps

```
%dir %[_libdir]/samba
%[_libdir]/samba/charset
%[_libdir]/samba/lowcase.dat
%[_libdir]/samba/upcase.dat
%[_libdir]/samba/valid.dat
%doc %[_mandir]/man1/findsmb.1.*
%doc %[_mandir]/man1/ldbadd.1.*
%doc %[_mandir]/man1/ldbdel.1.*
%doc %[_mandir]/man1/ldbedit.1.*
%doc %[_mandir]/man1/ldbmodify.1.*
%doc %[_mandir]/man1/ldbrename.1.*
%doc %[_mandir]/man1/ldbsearch.1.*
%doc %[_mandir]/man1/nmblookup.1.*
%doc %[_mandir]/man1/nmbstatus.1.*
%doc %[_mandir]/man1/profiles.1.*
%doc %[_mandir]/man1/rpcclient.1.*
%doc %[_mandir]/man1/sharesec.1.*
%doc %[_mandir]/man1/smbcacls.1.*
%doc %[_mandir]/man1/smbcontrol.1.*
%doc %[_mandir]/man1/smbclient.1.*
%doc %[_mandir]/man1/smbcquotas.1.*
%doc %[_mandir]/man1/smbget.1.*
%doc %[_mandir]/man1/smbtar.1.*
%doc %[_mandir]/man1/smbtree.1.*
%doc %[_mandir]/man1/testparm.1.*
%doc %[_mandir]/man5/lmhosts.5.*
%doc %[_mandir]/man5/smb.conf.5.*
%doc %[_mandir]/man5/smbgetrc.5.*
%doc %[_mandir]/man7/samba.7.*
%doc %[_mandir]/man8/eventlogadm.8.*
%doc %[_mandir]/man8/net.8.*
%doc %[_mandir]/man8/pdbedit.8.*
%doc %[_mandir]/man8/smbpasswd.8.*
%doc %[_mandir]/man8/smbpool.8.*
%doc %[_mandir]/man8/tddbbackup.8.*
%doc %[_mandir]/man8/tdbdump.8.*
%doc %[_mandir]/man8/tdbtool.8.*
```

Properly obsolete old stuff

- Users want smooth upgrades:

Provides: \$foo = %{version}
Obsoletes: \$foo < %{version}

- Needs a version update or:

- Obsoletes: \$foo <= %{version}
- And a comment!!!

```
Name: python-Twisted
Version: 11.0.0
Release: 0
Url: http://twistedmatrix.com/
Summary: An asynchronous networking framework
License: MIT
Group: Development/Languages/Python
Source: http://pypi.python.org/packages/sou
BuildRoot: %{_tmppath}/%{name}-%{version}-buil
BuildRequires: python-devel
BuildRequires: python-pyOpenSSL
BuildRequires: python-pam
BuildRequires: python-pyserial
BuildRequires: python-zopeinterface
Requires: python-pyOpenSSL
Requires: python-pam
Requires: python-pyserial
Requires: python-zopeinterface
%if 0%{?suse_version}
%py_requires
%endif
Provides: python-twisted = %{version}
Obsoletes: python-twisted < %{version}
Provides: python-twisted-core = %{version}
Obsoletes: python-twisted-core < %{version}
Provides: python-twisted-conch = %{version}
Obsoletes: python-twisted-conch < %{version}
Provides: python-twisted-lore = %{version}
Obsoletes: python-twisted-lore < %{version}
Provides: python-twisted-mail = %{version}
Obsoletes: python-twisted-mail < %{version}
Provides: python-twisted-names = %{version}
Obsoletes: python-twisted-names < %{version}
Provides: python-twisted-news = %{version}
Obsoletes: python-twisted-news < %{version}
Provides: python-twisted-runner = %{version}
Obsoletes: python-twisted-runner < %{version}
Provides: python-twisted-web = %{version}
Obsoletes: python-twisted-web < %{version}
Provides: python-twisted-words = %{version}
Obsoletes: python-twisted-words < %{version}
Provides: python-twisted-xish = %{version}
Obsoletes: python-twisted-xish < %{version}
%endif python_citacek: %label1 python_citacek %/r
```


Package naming

- Name your package after the upstream tarball
- Case matters!
- Ruby, Perl and Python packages are named:
 - python-\$EXACT_PYPI_NAME
 - rubygem-\$EXACT_GEM_NAME (subject to change)
 - perl-\$EXACT_CPAN_NAME
 - Includes some rules to replace special chars(like ':')

A matter of taste

- Instead of PreReq: foo
 - Requires(pre): foo
 - Requires(post): foo
- Source Services!
 - (Mostly) banned in Factory
- Running test suites (%check section):
 - Helps to spot issues early
 - Helps to identify runtime requirements for dynamic languages
 - Can take considerable build power
 - Maybe disable before uploading, use locally only

Describe your patches

- WTH, what was that patch good for?

```
# PATCH-FEATURE-UPSTREAM gdm-plymouth.patch vuntz@opensuse.org -- Get a nice transition from plymouth; 1
Patch0:      gdm-plymouth.patch
# PATCH-FIX-UPSTREAM gdm-plymouth-X-nr.patch vuntz@opensuse.org -- Patch on top of the previous patch (v
Patch1:      gdm-plymouth-X-nr.patch
# PATCH-FIX-UPSTREAM gdm-helper-directory.patch bgo582320 vuntz@novell.com -- Add --with-consolekit-dire
Patch2:      gdm-helper-directory.patch
# PATCH-FIX-OPENSUSE gdm-is-not-unstable-unless.patch vuntz@opensuse.org -- Make gdm think it's never ru
Patch3:      gdm-is-not-unstable-unless.patch
# PATCH-FIX-UPSTREAM gdm-vt-allocation-hack.patch bgo511168 hpj@novell.com -- Needed for user switching
Patch4:      gdm-vt-allocation-hack.patch
# PATCH-FIX-OPENSUSE gdm-desktop-session-env-pam.patch bnc427744 vuntz@novell.com -- Sets a PAM environm
Patch6:      gdm-desktop-session-env-pam.patch
# PATCH-FIX-OPENSUSE gdm-suse-xsession.patch vuntz@novell.com -- Use the /etc/X11/xdm/* scripts
Patch7:      gdm-suse-xsession.patch
# WARNING: do not remove/significantly change patch8 without updating the relevant patch in accountsserv
# PATCH-FIX-OPENSUSE gdm-sysconfig-settings.patch bnc432360 hpj@novell.com -- Read autologin options fro
Patch8:      gdm-sysconfig-settings.patch
# PATCH-FEATURE-OPENSUSE gdm-passwordless-login.patch vuntz@opensuse.org -- Support DISPLAYMANAGER_PASSW
Patch9:      gdm-passwordless-login.patch
# PATCH-NEEDS-REBASE gdm-domain-logon.patch hpj@novell.com -- Add UI to log in a specific domain (was: F
Patch10:     gdm-domain-logon.patch
# PATCH-NEEDS-REBASE PATCH-FIX-UPSTREAM gdm-greeter-greeter-ui.patch bnc436431 bgo560508 vuntz@novell.co
Patch15:     gdm-greeter-greeter-ui.patch
# PATCH-FIX-UPSTREAM gdm-always-reflect-keyboard-layout.patch bnc438159 bgo561771 hpj@novell.com -- Make
Patch18:     gdm-always-reflect-keyboard-layout.patch
```

- Bonus points:
 - Name your patch *\$FOO.patch*
 - Unified diff format (*diff -u a b*)

The way of the dodo

- AutoReqProv: on
- Prefix: /usr
- #norootforbuild
- #useforbuild
- BuildRoot: %[_tmppath]/%{name}-%{version}-build
- %clean
rm -rf %{buildroot}
- Packager: John Doe
- Don't list authors in %descriptions

Fin!

- Every rule has exceptions!
- It never hurts to:
 - Ask on IRC (#opensuse-packaging, #opensuse-factory)
 - Ask on mailing lists (packaging, factory)
 - Ask the package maintainers
 - Ask the Factory review team
- Mistakes are good:
 - Don't let you drag down, setbacks are challenges!
 - It's fun after all ;-)

