

Building RPMs made easy



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Robert Scheck

fedora[™] 

Robert Scheck

Fedora Package Maintainer and Provenpackager
Fedora Ambassador and Ambassador Mentor
Part of Fedora Websites and Translation teams
Open Source Contributor and Software Developer

Mail: robert@fedoraproject.org

Web: <http://fedoraproject.org/wiki/RobertScheck>



Basic knowledge

RPM = RPM Package Manager

Spec file is for RPM what a Makefile is for „make“

Naming: `<name>-<version>-<release>.<arch>.rpm`

Some examples:

`bash-4.1.9-1.fc15.i686.rpm`

`fedora-release-14-1.noarch.rpm`

Source: `bash-4.1.9-1.fc15.src.rpm`



Preparing the system

RPM needs some predefined directories:

```
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 BUILD
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 BUILDROOT
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 RPMS
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 SOURCES
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 SPECS
drwxr-xr-x 2 robert users 4096 Mar 5 15:00 SRPMS
```

Get them by installing and executing tools:

- ▶ `yum install rpmdevtools`
- ▶ `rpmdev-setuptree`



RPM build directories

BUILD	Where source code gets compiled
BUILDRoot	Installation directory during build
RPMS	Contains created RPM packages
SOURCES	Source files (archives, patches, ...)
SPECS	Contains the „make“ files for RPM
SRPM	Holds the created SRPM packages

The RPMS directory contains subdirectories per CPU architecture like i386, i586, i686, x86_64, noarch



Before starting

Build your packages never as „root“ user

- ▶ If a Makefile or the software doesn't behave during the compiling as you've expected, you maybe could damage your whole system!
- ▶ Think about a sandbox system:
<http://fedoraproject.org/wiki/Projects/Mock>



Spec file tags

Name: Upstream name of the program/software

Version: Upstream version number

Release: Build/version number in Fedora

Summary: Really short summary (max. 80 chars)

URL: Website of the upstream program/software

Source: URI to the source code tarball/archive



Spec file tags

Group: RPM software group according to the `/usr/share/doc/rpm-*/GROUPS` file

License: Package license according to the <http://fedoraproject.org/wiki/Licensing> page

BuildRequires: Packages the software needs to build successfully

BuildArch: Build limitations (only for specials or CPU independent packages required)



And here we go...

A new empty skeleton can be achieved by:

- ▶ `rpmdev -newspec <name>`

RPM package building is started usually using:

- ▶ `rpmbuild -ba <name>.spec`



Proper way to behave

- ▶ English language, charset: US-ASCII or UTF-8
- ▶ Spec file should be readable (no obfuscation)
- ▶ Comments can be used for non-obvious things
- ▶ Every packager should be able to read the file without knowing the software or the sources
- ▶ Do not use too much wildcards in the `%files` section, too much could get included into the package



Some hints and tricks

Which license(s) does my package use?

- ▶ COPYING or LICENSE file, source code headers, ask developer/upstream if unclear

How to figure out the build requirements?

- ▶ Try, look for errors and the install packages
- ▶ `yum groupinstall 'Development Tools'`
- ▶ `yum grouplist | grep Development`



Get your package into Fedora

Go to the Fedora website and create an account:

- ▶ <http://join.fedoraproject.org/>

Follow the howtos and guidelines to get it into:

- ▶ <http://fedoraproject.org/wiki/PackageMaintainers/Join>

Actively maintain your package and care about!



Questions?



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Thank you!

