





How to participate

**Introduction in creating
RPM packages**

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chkconfig Cell_Phones off

A glass of water is partially visible on the left side of the image, resting on a light-colored wooden surface. In the foreground, two smooth, dark blue stones are placed on the wood. The stone on the left has a white lowercase letter 'f' on it, and the stone on the right has a white lowercase letter 'r'. The background is a plain, light-colored wall.

Agenda

- Introducing RPM
- Creating folders
- Downloading software
- Creating the SPEC-file
- Create SRPM
- Build RPM
- Create Account
- Uploading your files
- Wait for review
- It's done

Introducing RPM



RPM = RPM Package Manager

Database is in `/var/lib/rpm`

Package-Names: `<name>-<version>-<release>.<arch>.rpm`

Examples:

`bash-3.2-22.fc9.i386.rpm`

`system-config-date-1.9.30-2.fc9.noarch`

Source: `bash-3.2-22.fc9.src.rpm`

Sometimes: `bash-3.2-22.fc9.srpm`

Prepare your system



Install the packages needed for compiling software

```
yum groupinstall "Development Tools"  
yum install unifdef rpmlint rpmdevtools redhat-rpm-config
```

Don't build packages as root !

Prepare your system



RPM needs some predefined folders

```
ls -l /usr/src/redhat/
```

```
drwxr-xr-x 2 root root 4096 18. Apr 18:52 BUILD
drwxr-xr-x 9 root root 4096 15. Mai 20:31 RPMS
drwxr-xr-x 2 root root 4096 18. Apr 18:52 SOURCES
drwxr-xr-x 2 root root 4096 18. Apr 18:52 SPECS
drwxr-xr-x 2 root root 4096 18. Apr 18:52 SRPMS
```

Let`s create this folders in our home-folder

```
cd ~
rpmdev-setuptree
```

RPMs folders



BUILD	Temp-folder, used for compiling
RPMS	Created RPM packages
SOURCES	Sources (archives, sources, config-files, ...)
SPECS	SPEC-files for creating RPMs
SRPMS	Created Source-RPMs

What to package today



USB Modeswitch

http://www.draisberghof.de/usb_modeswitch/

Several new USB devices have their MS Windows drivers onboard; when plugged in for the first time they act like a flash storage and start installing the driver from there. After that this driver switches the mode internally, the storage device vanishes and a new device (like an USB modem) shows up. The WWAN gear maker Option calls that feature "ZeroCD (TM)".

Really simple: 1 binary, 1 config-file, 1 readme

Getting sources



```
cd rpmbuild  
cd SOURCES
```

```
wget http://www.draisberghof.de/usb_modeswitch/  
usb_modeswitch-0.9.4beta2.tar.bz2
```

```
wget http://www.draisberghof.de/usb_modeswitch/  
usb_modeswitch.conf
```

USB_Modeswitch needs libusb_devel

```
yum install libusb-devel
```



Plan it !



Now we have to create the SPEC-file.

SPEC is for RPM, what Makefile is for Make:

- How do I compile the software ?
- How to install ?
- How to remove ?
- Does it provide documentation ?
- Does it need config-files ?
- What License ?
- Readable description for the user

In this workshop, we can just download and edit it

```
cd ~  
cd rpmbuild/SPECS  
wget http://www.romal.de/files/usb_modeswitch.spec
```

The SPEC file



```
Name      : usb_modeswitch
Version:  0.9.4beta2
Release:  1%{?dist}
Summary:  USB Modeswitch gets 4G cards in operational mode
Group    : Applications/System
License:  GPLv2+
URL      : http://www.draisberghof.de/usb_modeswitch/
Source0:  http://www.draisberghof.de/%{name}/%{name}-%
          {version}.tar.bz2
BuildRoot:  %{_tmppath}/%{name}-%{version}-%{release}-root-
          %(%{__id_u} -n)
```

```
BuildRequires:  libusb-devel
```

```
Requires:       libusb
```

```
%description
```

USB Modeswitch brings up your datacard into operational mode. When plugged in they identify themselves as cdrom and present some non-Linux compatible installation files.

The SPEC file



```
%prep
```

```
%setup -q
```

```
%build
```

```
./compile.sh
```

```
%install
```

```
rm -rf $RPM_BUILD_ROOT
```

```
mkdir -p $RPM_BUILD_ROOT%{_bindir}
```

```
mkdir $RPM_BUILD_ROOT%{_sysconfdir}
```

```
install -p -m 755 usb_modeswitch $RPM_BUILD_ROOT%{_bindir}/
```

```
install -p -m 644 usb_modeswitch.conf $RPM_BUILD_ROOT%{_sysconfdir}/
```

The SPEC file



```
%clean
```

```
rm -rf $RPM_BUILD_ROOT
```

```
%files
```

```
%defattr(-,root,root,-)
```

```
%{_bindir}/usb_modeswitch
```

```
%{_sysconfdir}/usb_modeswitch.conf
```

```
%doc COPYING README*
```

```
%changelog
```

```
* Sat May 26 2008 Robert M. Albrecht <romal@gmx.de>
```

```
0.9.4beta2-1
```

```
- First package Release
```

Build it !



Building the SRPM



Source-RPMs includes all needed files for compiling the binary-RPMs. Using the SRPM, the compile-farm can automatically create RPMs for inclusion in Fedora-releases .

We need to create the SRPM first. This is used in creating the binary-RPMs for all supported architectures (32 Bit, 64 Bit, PowerPC, ...).

Before starting, we should check for obvious errors:

```
cd ~/rpmbuild/SPEC
rpmlint usb_modeswitch.spec
```

If rpmlint finds any problems, you should fix them.

Building the SRPM



rpmbuild is a Make for RPM packages

- bs = Build Source (create SRPM)
- bb = Build Binary (create RPMs)
- ba = Build All (create SRPM und RPMs)

```
cd ~/rpmbuild/SPEC  
rpmbuild -bs usb_modeswitch.spec
```

Created:

```
~/rpmbuild/SRPMS/usb_modeswitch-0.9.4beta2-1.fc9.src.r  
pm
```

```
ls -l SRPMS/  
-rw-r--r-- 1 romal romal 25268 20. Mai 21:45  
usb_modeswitch-0.9.4beta2-1.fc9.src.rpm
```

Building the RPM



```
rpmbuild -bb usb_modeswitch.spec
```

```
Ausführung(%prep): /bin/sh -e /var/tmp/rpm-tmp.64527
+ umask 022
+ cd /home/romal/rpmbuild/BUILD
+ rm -rf usb_modeswitch-0.9.4beta2
+ /usr/bin/bzip2 -dc
/home/romal/rpmbuild/SOURCES/usb_modeswitch-0.9.4beta2.tar.
bz2
+ tar -xf -
+ cd usb_modeswitch-0.9.4beta2
.....
+ cd /home/romal/rpmbuild/BUILD
+ cd usb_modeswitch-0.9.4beta2
+ rm -rf /var/tmp/usb_modeswitch-0.9.4beta2-1.fc9-root-
romal
+ exit 0
```

Building the RPM



```
ll RPMS/i386/*
```

```
... RPMS/i386/usb_modeswitch-0.9.4beta2-1.fc9.i386.rpm  
... RPMS/i386/usb_modeswitch-  
debuginfo-0.9.4beta2-1.fc9.i386.rpm
```

Testing the RPM



```
rpm --install  
RPMS/i386/usb_modeswitch-0.9.4beta2-1.fc9.i386.rpm
```

```
rpm --verify usb_modeswitch
```

```
rpm --query --list usb_modeswitch
```

```
rpm --erase usb_modeswitch
```

Share it !



Create your account



Go to the Fedora website and create your account:

<http://fedoraproject.org/wiki/Join>
<http://bugzilla.redhat.com>

While waiting for the response mail:

<http://fedoraproject.org/wiki/PackageMaintainers>

Now you can request a package-review. Place the SRPM- and SPEC-file on a webserver and publish the URL:

<http://fedoraproject.org/wiki/PackageReviewProcess>

Review



Fedora Extras Package Review Request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://bugzilla.redhat.com/enter_bug.cgi?product=Ft

Release Notes Fedora Project Red Hat Free Content

redhat SUPPORT DOWNLOAD Goto bug # Go

Home Enterprise Linux JBoss Training Red Hat Network Truth Happens Fedora Store Bugzilla WORLDWIDE

Home New Show Query Reports Requests Account Help

Logged in stickster@gmail.com | My Front Page | Log Out

Fedora Extras Package Review Request: This page lets you create a request for package review.

Once submitted, the request will be automatically attached to the FE-NEW blocker report and the appropriate people notified.

Review Summary: Review Request: foo - creates world peace

Help: Brief description of new package. Ex: Review Request: foogrokker - Universal parser library

Review Description:

```
Spec URL: http://internet.com/~spot/foo.spec
SRPM URL: http://internet.com/~spot/foo-1.0.0-1.src.rpm
Description:

Hi! I just finished packaging up foo, and I would appreciate a review so that I
can get it into Fedora Extras!

foo is designed to create world peace by destroying all life on a planet. It also
contains extensive documentation on how to enable foo functionality in other
projects.
```

Help: Package information and more detailed description of function the new package performs.

Only users in all of the selected groups can view this review request:
(Leave all boxes unchecked to make this a public review request.)

Fedora Project Contributors
 Security Sensitive Bug (Check if this needs to be kept confidential)

Done bugzilla.redhat.com



An experienced developer will review your packet. When the review is successful you get access to the repository (CVS).

You can now upload your package and wait for the next Fedora release. Sometimes new packages get pushed out as an update for the current release.

As Fedora does a release every 6 month, it won't be too long anyway :-)

Credits & Links



Chitlesh Goorah for the layout

www.fedoraproject.org/wiki/ChitleshGoorah

Diana Fong for the great pictures

www.fedoraproject.org/wiki/DianaFong

www.creativecommons.org/licenses/by-nc-nd/2.5/

Christopf Wickert for his tips & tricks

www.fedoraproject.org/wiki/ChristophWickert

Fedora Project Homepage

www.fedoraproject.org

Robert M. Albrecht

www.fedoraproject.org/wiki/RobertAlbrecht

We can't wait to impress you,

The **fedora**[™]  team

