RPM packaging magic

Red Hat

Ondřej Vašík
2012-10-19

Abstract

Some tricks and tips from advanced RPM packaging. Scriptlet order, triggers, %lang macro, obsoletes/provides + where to find more.

# Scriptlets – scriptlet order (1/2)

Scriptlet order -
http://fedoraproject.org/wiki/Packaging:ScriptletSnippets#Scriptlet_Ordering

1) %pretrans (new)

2) %pre (new)

3) Package installation (new)

4) %post (new)

5) %triggerin (new) and %triggerun (old)

6) %preun (old)

7) Package uninstallation (old)

8) %postun (old)

9) %triggerpostun (old)

10) %posttrans (new)

Scriptlets – scriptlet order (2/2)

- Worst case – uninstallation of old package causes problem
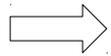
    ⟹   can be solved via %posttrans scriptlet

- Triggers

    - Very powerful RPM weapon

    - Useful for e.g. Plugin registration, SysVinit->systemd transition, workarounds for specific versions – to avoid explicit direct Requires:

        Example:

```
%triggerin -- openjade >= %{openjadever}
eval set %{version_list}
for dir
do
  fmt=${dir#*-} ver=${dir%%-*}
  /usr/bin/xmlcatalog --sgml --noout --add /etc/sgml/$fmt-docbook-$ver.cat \
    /usr/share/sgml/openjade-%{openjadever}/catalog
done
```

Scriptlet special variables

Scriptlet special variables:

http://fedoraproject.org/wiki/Packaging:ScriptletSnippets#Syntax

	install	upgrade	uninstall
%pretrans	$1 == 0	$1 == 0	N/A
%pre	$1 == 1	$1 == 2	N/A
%post	$1 == 1	$1 == 2	N/A
%preun	N/A	$1 == 1	$1 == 0
%postun	N/A	$1 == 1	$1 == 0
%posttrans	$1 == 0	$1 == 0	N/A

Secondary architectures

- Primary – only i686 and x86_64, others are secondary

- Be nice to maintainers of secondary architectures!

- Builds separate – e.g. arm.koji.fedoraproject.org/koji/ (ppc.,s390.,sparc.,...)

- Maintainers = provenpackagers – ausil,dhorak,karsten,probinson

- %ifarch vs. ExclusiveArch/ExcludeArch

  - %ifarch – some functionality will be missing

  - ExcludeArch – package doesn't make sense on arch

  - ExclusiveArch – package makes sense only on this arch

Lang files

- Extremely helpful for packaging localized versions

- RPM macro %find_lang %{name}

- Adding to files section as %files -f %{name}.lang

- Additional options – e.g. %find_lang %{name} –with-man for localized manpages

- See more on https://fedoraproject.org/wiki/Packaging:Guidelines?rd=Packaging/Guidelines#Handling_Locale_Files

Provides/Obsoletes/Conflicts/Alternatives

- Conflicts – should not be used, exceptions via Fedora Packaging Commitee

- Provides/Obsoletes:

  - use versioned, be aware of epoch!

  - useful in the case of package replacement

    Provides: oldpackagename = $provEVR

    Obsoletes: oldpackagename < $obsEVR

- Virtual provides – when all packages have some required functionality, to avoid explicit requires on one of the packages

- Alternatives – multiple packages with the same functionality (and binary name) – e.g. Sendmail vs. Exim vs. Postfix as mta

Best practices :)

- Be extremely careful with update path (epoch-version-release numbering)!

- Don't use asterisks in files section too much to prevent losing control

- Run testsuite in %check section, when available

- Use parallel build when possible - make %{?_smp_mflags}

- Try to avoid Fedora/Redhat words in filenames/description/summary/ of packages

- Shared libraries - don't forget to run /sbin/ldconfig in post/postun!!!

- Systemd macroized scriptlets - https://fedoraproject.org/wiki/Features/PackagePresets

- See https://fedoraproject.org/wiki/Packaging:Guidelines for more tip&tricks ;)

- Don't lose your attention – guidelines changes! - watch packaging@lists.fedoraproject.org , feel free to ask there and/or discuss proposals!

The end.

Thanks for listening!