

Comparison of binary package formats

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Purpose of binary packages

Provide a prebuilt software and related metainformation which can be used to enable the users/administrators to easily maintain (install, upgrade, remove) the system and application programs (central repositories, dependency hell, autoupdates, . . .) so that the system remains consistent and its resources are used in a efficient way.

Binary packages formats

- RPM (RHEL, Fedora, CentOS, SUSE, Mandriva, ...)
- DEB (Debian, Ubuntu, ...)
- TGZ (FreeBSD, Arch Linux, Slackware, ...)
- ...

RPM binary packages

- RPM, SRPM, SPEC files, internal uses gzip for compression.
- SPEC file structure: name, summary, description, E-V-R, (build)requires, %prep, %build, %install, %clean, scriptlets, triggers.
- pros: DeltaRPM (Mandriva, SUSE, F9), GPG signatures, good support for multilib systems, SPEC file variability, autogenerating dependencies, most widespread.
- cons: no suggestions, rich features mean less simple design, need to use rpm2cpio to unpack.
- rpmlint

DEB binary packages

- debian-binary, data.tar.gz, control.tar.gz
- pros: suggestions (vs. interactivity!), tar archive, package priorities, GPG signed packages
- cons: no *direct* multilib support, no file dependencies, no triggers.
- control file structure: similar to the RPM's (except from namings:)
- lintian

TGZ binary packages

- the way of using the archives varies across the distributions pretty much.
- Arch Linux: PKGBUILD + .FILELIST, .PKGINFO, .INSTALL
- pros: the use of standard format
- cons: no GPG signing, no triggers, the use is limited to one or a few distributions not very widespread nowadays

How to compare?

- We may consider that (almost) every distro has its own package policy which can differ from the standard use.
- If we need rich features the competition is limited to RPM or DEB and is almost always determined by the choice of your distribution. Hence it is rather a subject to flame:) Although it would be probably possible to use a different package format, I doubt there are many users going this way.

Related information

- Package managements systems: up2date, yum, urpmi, apt.
- package formats conversion: alien (still not stable).

Links

- DEB:
 - [http://en.wikipedia.org/wiki/Deb_\(file_format\)](http://en.wikipedia.org/wiki/Deb_(file_format))
 - http://tldp.org/HOWTO/html_single/Debian-Binary-Package-Building-HOWTO/
 - <http://www.linuxdevices.com/articles/AT8047723203.html>
 - http://www.debian.org/doc/FAQ/ch-pkg_basics.en.html
- RPM:
 - <http://www.rpm.org>
 - http://en.wikipedia.org/wiki/RPM_Package_Manager
 - <http://docs.fedoraproject.org/drafts/rpm-guide-en/>
 - <http://genetikayos.com/code/repos/rpm-tutorial/trunk/rpm-tutorial.html>
 - <http://www.ibm.com/developerworks/library/l-rpm1/>
 - <http://www.abclinuxu.cz/clanky/navody/rukovet-balice-rpm-i-uvod>
- TGZ:
 - <http://www.abclinuxu.cz/clanky/system/balickovaci-system-arch-linuxu-1-format-balicku>
- Others:
 - plkárna FI: thread Distro showdown - let your voices be heard (21.9.2007)
 - <http://kitenet.net/~joey/pkg-comp/>
 - <http://linux.die.net/man/1/alien>
 - http://www.howtoforge.com/convert_rpm_to_deb_with_alien