

# From Source Code to Packages for Various Distributions

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# Software Packaging is solved – is it?

- How to reach many users with working software packages?
- How to build for different distributions?
  - different locations for config files, libraries etc.
- How to build for different versions of a distribution?
- How to build for different architectures?
- How to build in such a way that local modifications of build machine will not effect the built package?

# OBS is the Rescue



- build binary packages for many distributions and platforms
- make them available for download
- make them available in your own OBS repository

# Build Service Demo

The slide features a solid blue background. At the bottom, there are several horizontal white lines of varying lengths and thicknesses, creating a decorative effect.

Background

# Packages and Projects

- All packages are part of a project
- Multiple developers can work on a project and/or a package
- Projects define the target distributions
- Packages can be build for all or only a subset of defined target distributions

# Automatic Dependency Rewriting

- Problem: packages get renamed or are named different for different distributions.
  - Example: package containing shared libraries for canna

|           |            |
|-----------|------------|
| SUSE:     | canna-libs |
| Fedora:   | Canna-libs |
| Mandriva: | libcanna1  |
| Debian:   | libcanna1g |

- Project can specify per repository dependency rewrite rules:

Substitute: `<package> <replacement packages>`

# Adding Specials to Spec Files

- Used statements:

```
%if 0%{?suse_version} < 1010  
    do something  
%endif
```

```
%if 0%{?mandriva_version}  
    Name: libopensync  
%else  
    Name: opensync  
%endif
```



# Automatic Rebuilding

- Automatic rebuild (configurable) of package if dependent packages change
  - avoids ABI incompatibilities
  - avoids dependency on library that has been removed
  - catches some changes in behavior of scripts/apps during build

# OBS via command line - osc

- osc add – add file to package
- osc build – build on local machine
- osc results – show build results from server
- osc co – checkout package
- osc ci – checkin package
- osc branch – branch package for own development
- osc submitrequest – request package checkin in another project
- osc request – show and modify requests

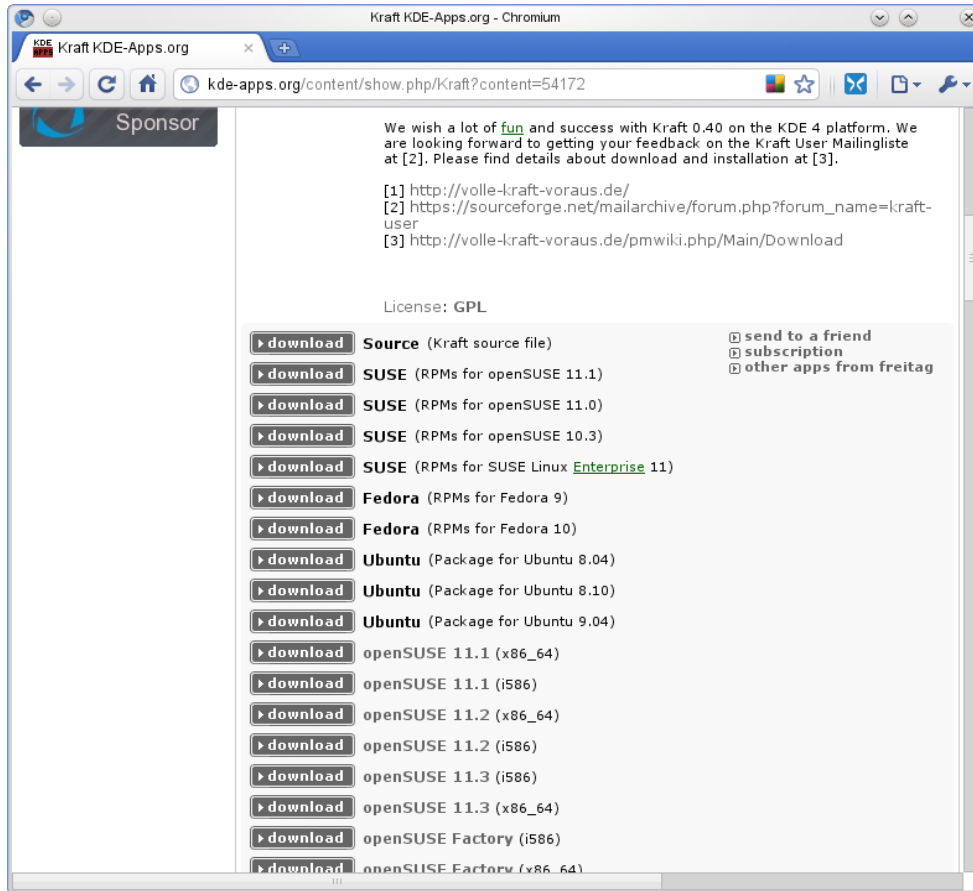
# OBS is...

- Open Source under GPLv2
- Developed by engineers from Novell, Cray, Intel, Nokia, ... and individuals
- Used by Cray, Dell, Intel, Nokia, LinuxFoundation, MeeGo,...
- Used to create LiveCDs to demo products
- Integrated in SUSE Studio and allows easy appliance creation with custom packages
- Not working without packaging skills ;-)

# Your Own OBS?

- At <http://build.opensuse.org> you can build Open Source packages online for Debian, Fedora, Mandriva, openSUSE, Red Hat Enterprise Linux, SUSE Linux Enterprise,...
- Alternative: install your own instance of OBS
  - Available as source, ready-to-run appliance (virtual image) and installation media
  - Support for additional architectures
  - Quality of service, faster rebuild
  - Instances can connect with each other - reference packages and repositories, e.g. the full openSUSE 11.3 distribution on build.o.o

# Integration with Forges



- (planned - needs work by forges) Integration with Forges like SourceForge, Berlios, KDE-Apps
  - Build package from the forge
  - show on forge project page list of binaries

# Unique Features of OBS

- Building for multiple distributions
- Automatic rebuilding on dependency change
- Open System – nice integration with IDEs, Forges and tools
- Easy to install

# New in OBS 2.1

- Source services, checkout from svn/git
- Enhanced WebUI:
  - Source handing
  - Revision control
  - Source services editing
  - Create submit requests
  - Source history

# Try it!

- <http://build.opensuse.org> to build packages for Debian, Fedora, Mandriva, openSUSE, Red Hat Enterprise Linux, SUSE Linux Enterprise,...
- Source code: `git@gitorious.org:opensuse/build.git`
- Documentation incl. local installation instructions: [http://wiki.opensuse.org/Portal:Build\\_Service](http://wiki.opensuse.org/Portal:Build_Service)
- Communication:
  - `opensuse-buildservice@opensuse.org`
  - `#opensuse-buildservice`, IRC freenode



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