

Software Packaging

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What We'll Cover

Very Short

- Why Packaging is Critically Important
- Overview of Software Packaging
- RPM Package Management

Focus

- Hands On
Demonstration
- Introduction to
“Packaging with Open Build Service”

Why Packaging is Critically Important

Software for Everyone

Software is integral to your business

- Server applications
- Desktops applications
- Labs environments
- Front office / Back office / Web presence
- Production, Operations, Payroll, R&D, HR



Complications?

More and More computers

More and More Software

- Auditing, Policies, and Regulations
- Risk management
- Balancing Control and Flexibility
- People and Tools
- Getting the Job Done



Software Packaging

Gets your software where it needs to go

- Consistency
- User-appropriate
 - Varying expertise
 - External Customers
 - Internal Users
- Cross platform ; multiple architectures
- Easy to distribute
- Easier to scale

Overview of Software Packaging

Your Software Wants to be Used!

How to get software to the customer?

- What distro do customers use? Architecture?
- What level of expertise do the customers have?
- Source code?
- How will customers install it?
- What runtime dependencies exist?
- How will customers get the latest updates?

What is Software?

- Executable program, libraries, scripts, data
 - /usr/bin/foo (0755 root root)
 - /usr/lib64/libfoo.so.1 (0755 root root)
- Configuration files
 - /etc/foo (0644 root root)
- Documentation (yes please!)
 - Maybe the customer doesn't want the docs; optional
- Development files
 - Files others can use to build more apps that work with yours



Managing the Bits and Bytes

- Keep Track of All the Files
 - And their changes!
- Consistent, Reproducible and Predictable
- Update and Upgrade
 - Easy!
- Uninstall
 - It's a shame, but don't make the customer suffer

Manged with METADATA

Package Metadata

- Version tracking
- Manifest of files
- Descriptive data
- Rules for
 - Installing
 - Updating
 - Uninstalling
- Dependencies

Packaging Benefits

Benefits for user and developer

- Consistency
- Reproducibility
- Tracking, auditing and management
- Integrity
- Tie binaries back to sources for support
- Log changes



RPM Package Management

RPM Package Management

- Principal Distributions
 - SUSE / openSUSE
 - RedHat / Fedora
- Build
 - “spec” file is the build specification
 - Builds from sources (or not)
 - Metadata about software
- Delivers
 - Creates .rpm file



RPM Repositories

- SUSE® / openSUSE
 - zypper (yast) client tools
 - repomd repository format
- RedHat / Fedora
 - yum client tools
 - yum repository format (effectively same as repomd)



RPM Packaging Fundamentals

- “package”
 - Normal .rpm file (delivers the software)
 - The set of files necessary to build
- RPM database
- rpm
- rpmbuild
 - Builds from sources
 - Builds for a specific architecture
 - Creates version'd binary packages for installation/upgrade
 - cpio archive of files + scriptlets

Hands On Demonstration

Learn More

Packaging

- Web: <http://en.opensuse.org/Portal:Packaging>
- ML: <http://lists.opensuse.org/opensuse-packaging>
- IRC: freenode #opensuse-packaging

Open Build Service

- Web: <http://openbuildservice.org>
- ML: <http://lists.opensuse.org/opensuse-buildservice>
- IRC: freenode #opensuse-buildservice



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