



Using Eclipse to Build a Linux Distribution

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EclipseCon, March 23, 2011

What This Talk is About...

- Looking behind the scenes: Fedora
- An Eclipse-based solution for the Fedora packaging problem



Linux Distributions. There Are Many of Them...



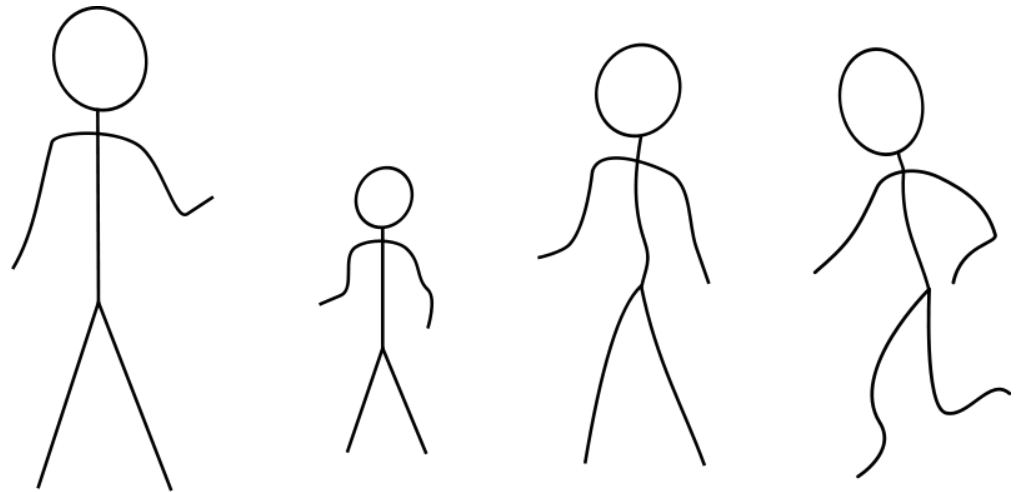
We Will Focus on Fedora

fedora 



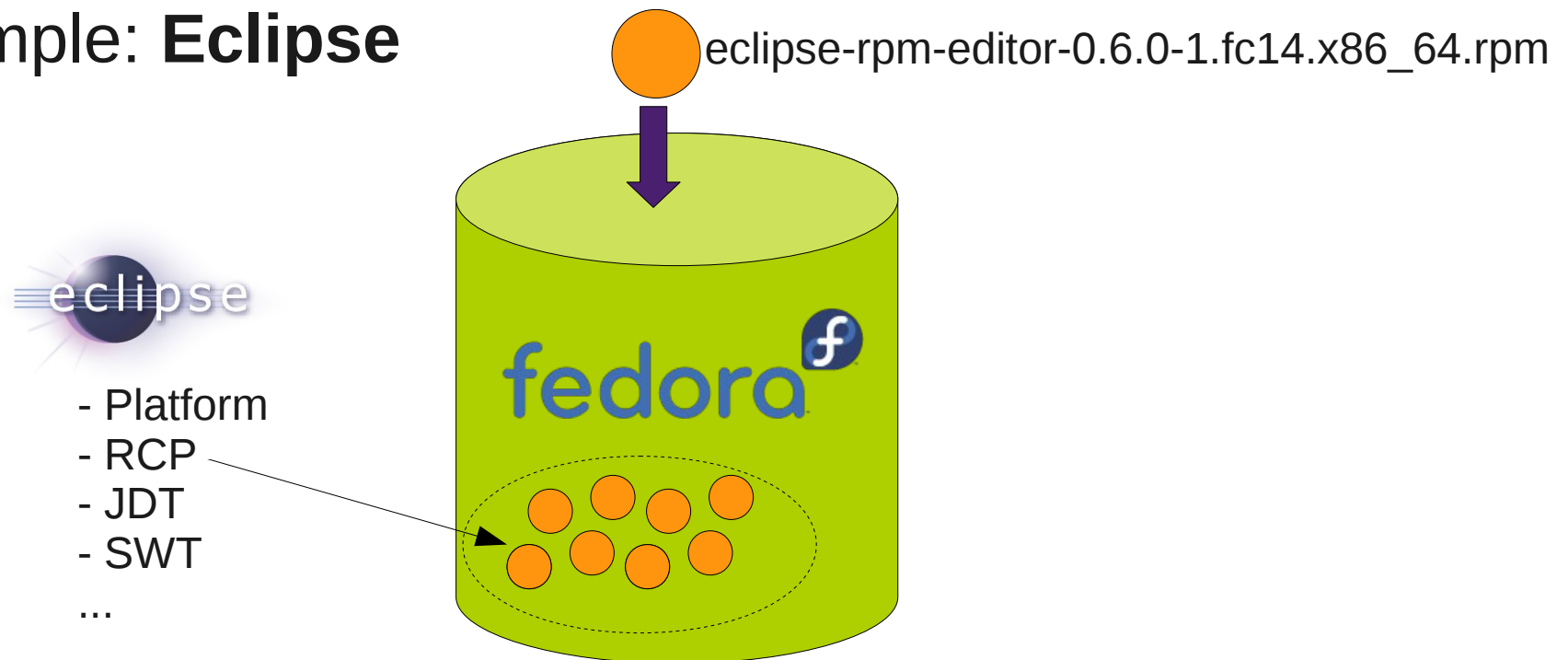
Who Are The People Behind Fedora?

- Software engineers
- Packagers
- Designers
- Volunteers
- Students
- You?



OK, So **What** Exactly Is Fedora?

- An operating system, a collection of applications. Many applications.
- One application, for example Eclipse, may be provided by a collection of packages (RPMs)
- Example: **Eclipse**

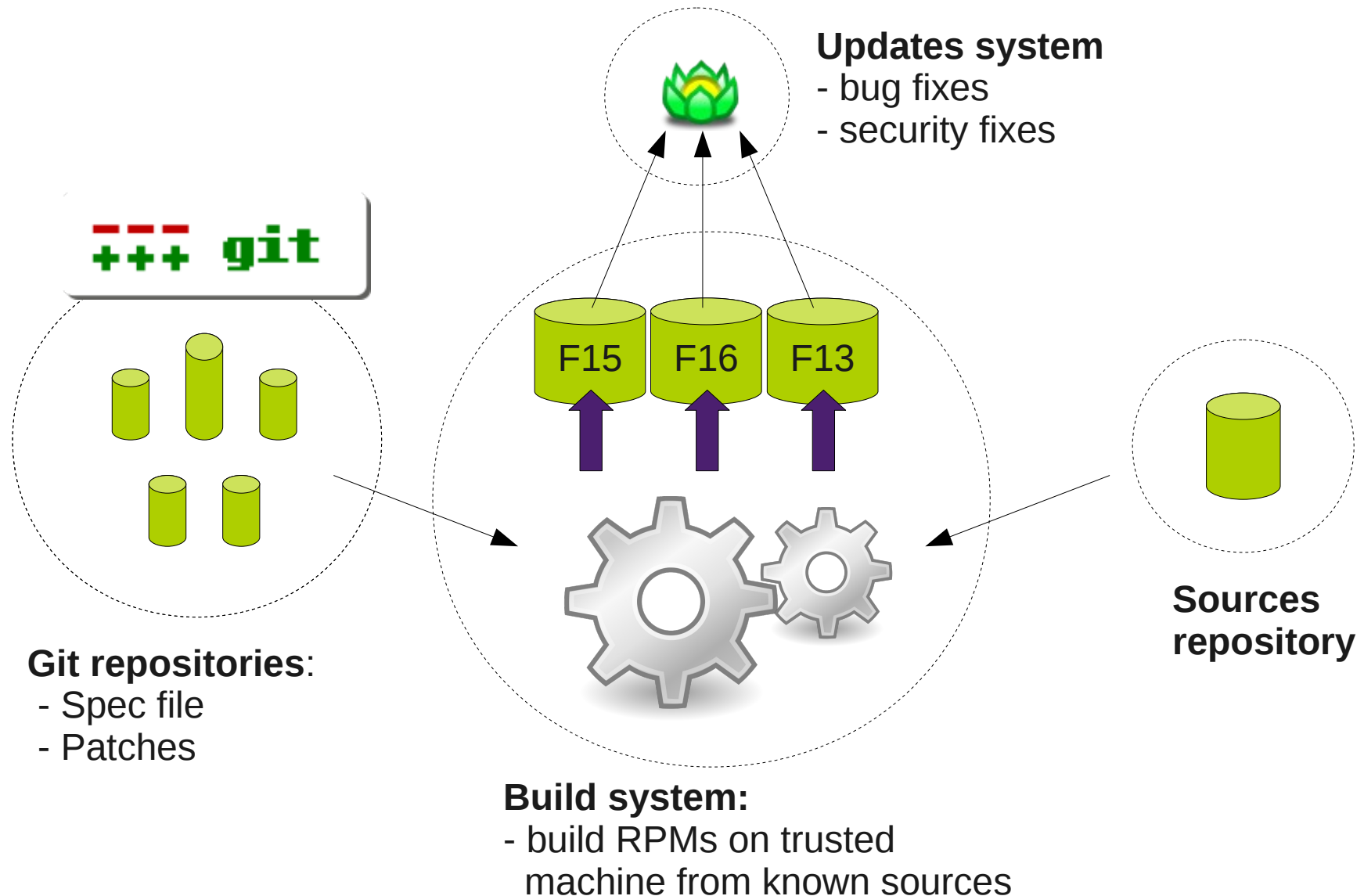


How Are Packages Created?

- Ingredients:
 - Upstream sources
 - Spec file (package name, files part of a package, description, instructions how to build from sources, etc.)
 - Patches for upstream sources
 - **All items above are kept in a Git repository**
 - Build system
 - Update system



Overview of Fedora Infrastructure



What Our Tool Tries to Solve?

- Remember, we have seen...
 - By whom Fedora is created (Fedora community)
 - What Fedora is
 - How Fedora is created, but ...
- Many contributors are also developers of upstream projects
- Some use Eclipse for their work already
- No existing GUI tool for Fedora packaging and interaction with infrastructure
- Packaging work with existing tools is cumbersome, hard for newcomers to pick up.

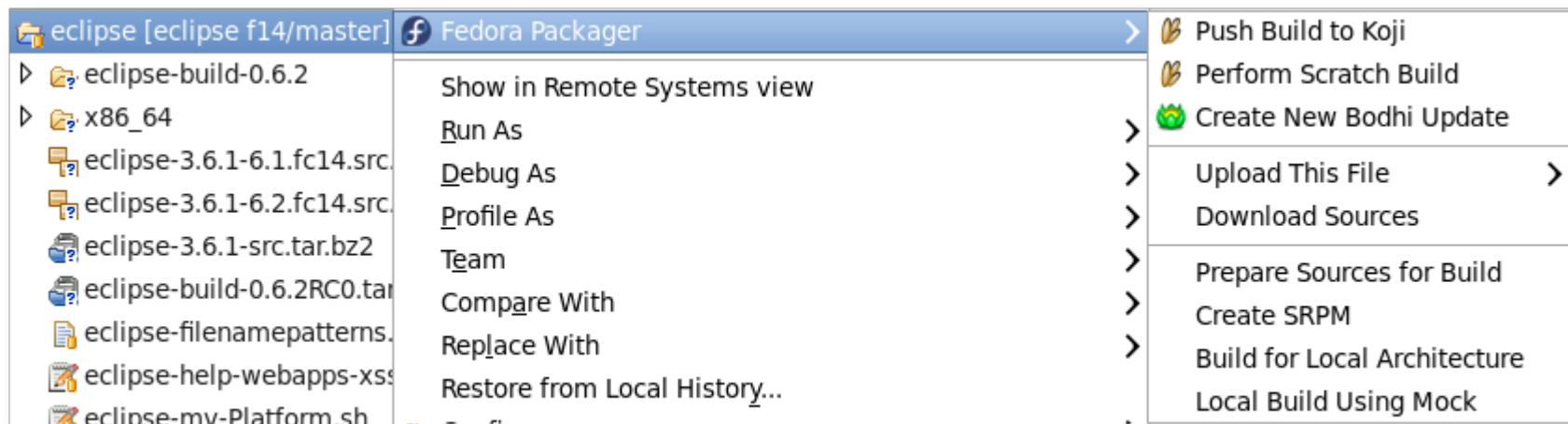


The Solution: Fedora Meets Eclipse

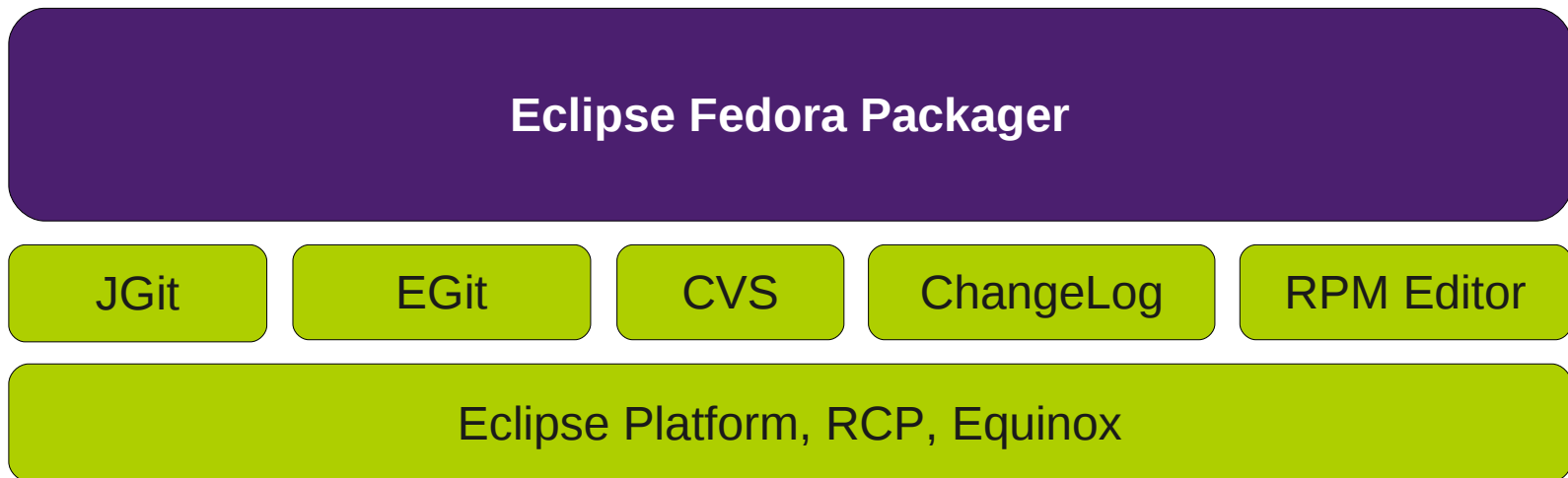


Eclipse Fedora Packager

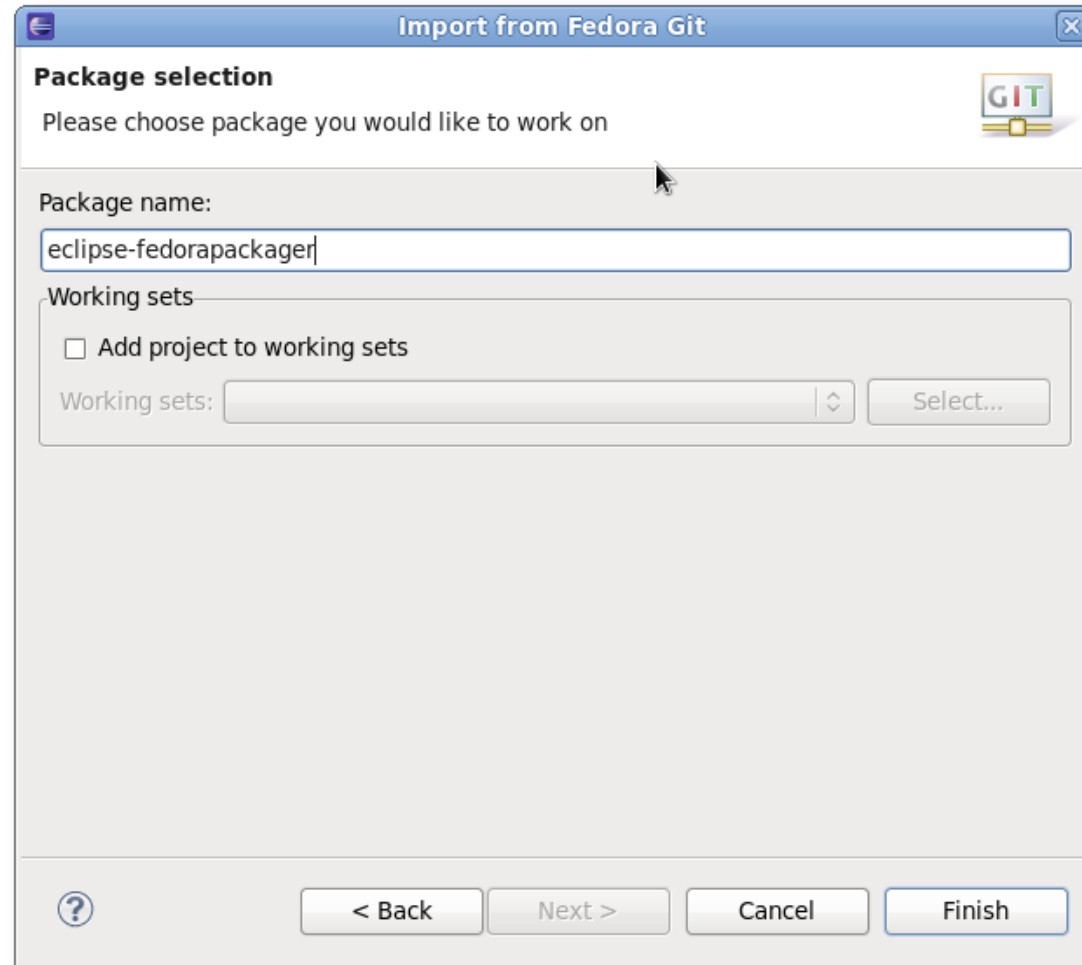
- Spec File Editor
- Git integration (using EGit, JGit)
- Easy interaction with Fedora packaging infrastructure
- Increase productivity by speeding up Fedora packaging work



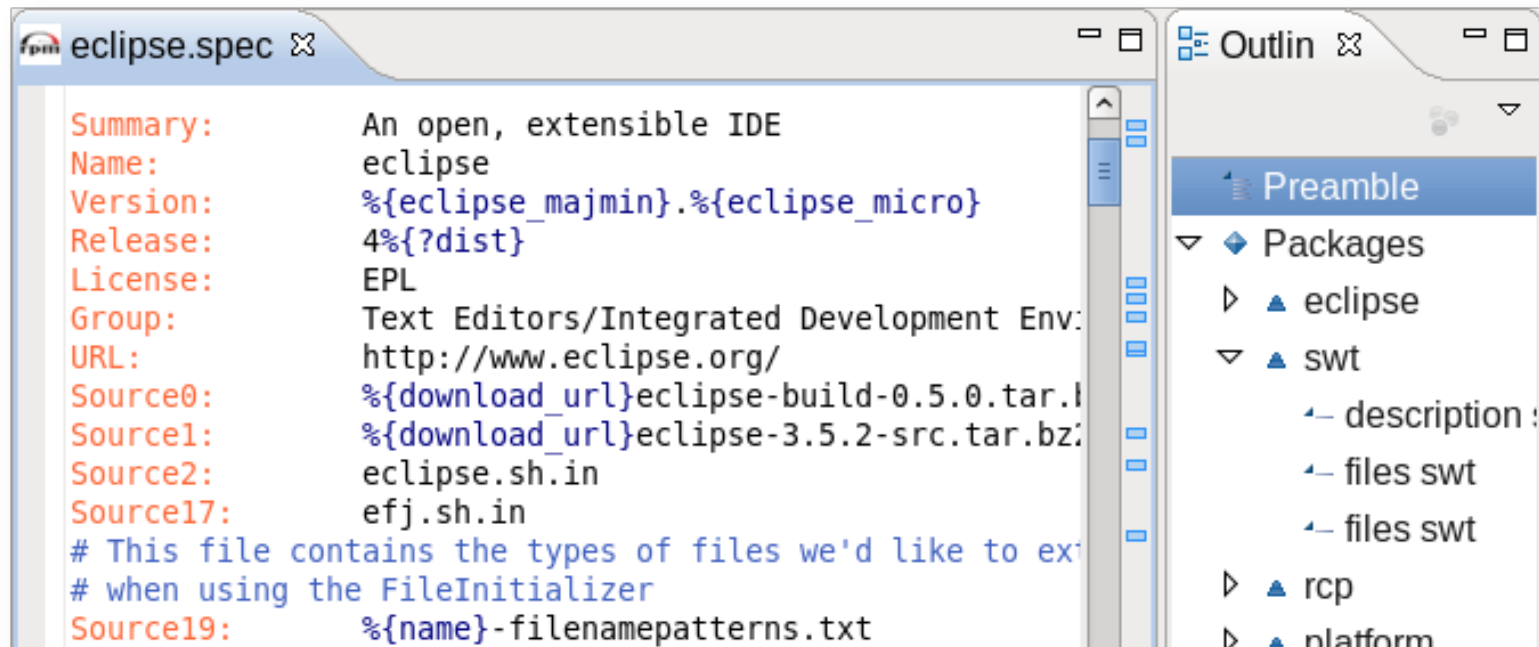
Eclipse Fedora Packager Architecture



Typical Workflow: Import a Package



Spec File Editor




```
Summary:      An open, extensible IDE
Name:         eclipse
Version:      %{eclipse_majmin}.%{eclipse_micro}
Release:      4%{?dist}
License:      EPL
Group:        Text Editors/Integrated Development Env:
URL:          http://www.eclipse.org/
Source0:      %{download_url}eclipse-build-0.5.0.tar.l
Source1:      %{download_url}eclipse-3.5.2-src.tar.bz:
Source2:      eclipse.sh.in
Source17:     efj.sh.in
# This file contains the types of files we'd like to ex
# when using the FileInitializer
Source19:     %{name}-filenamepatterns.txt
```

Outline view:

- Preamble
- Packages
 - eclipse
 - swt
 - description :
 - files swt
 - files swt
 - rcp
 - nplatform

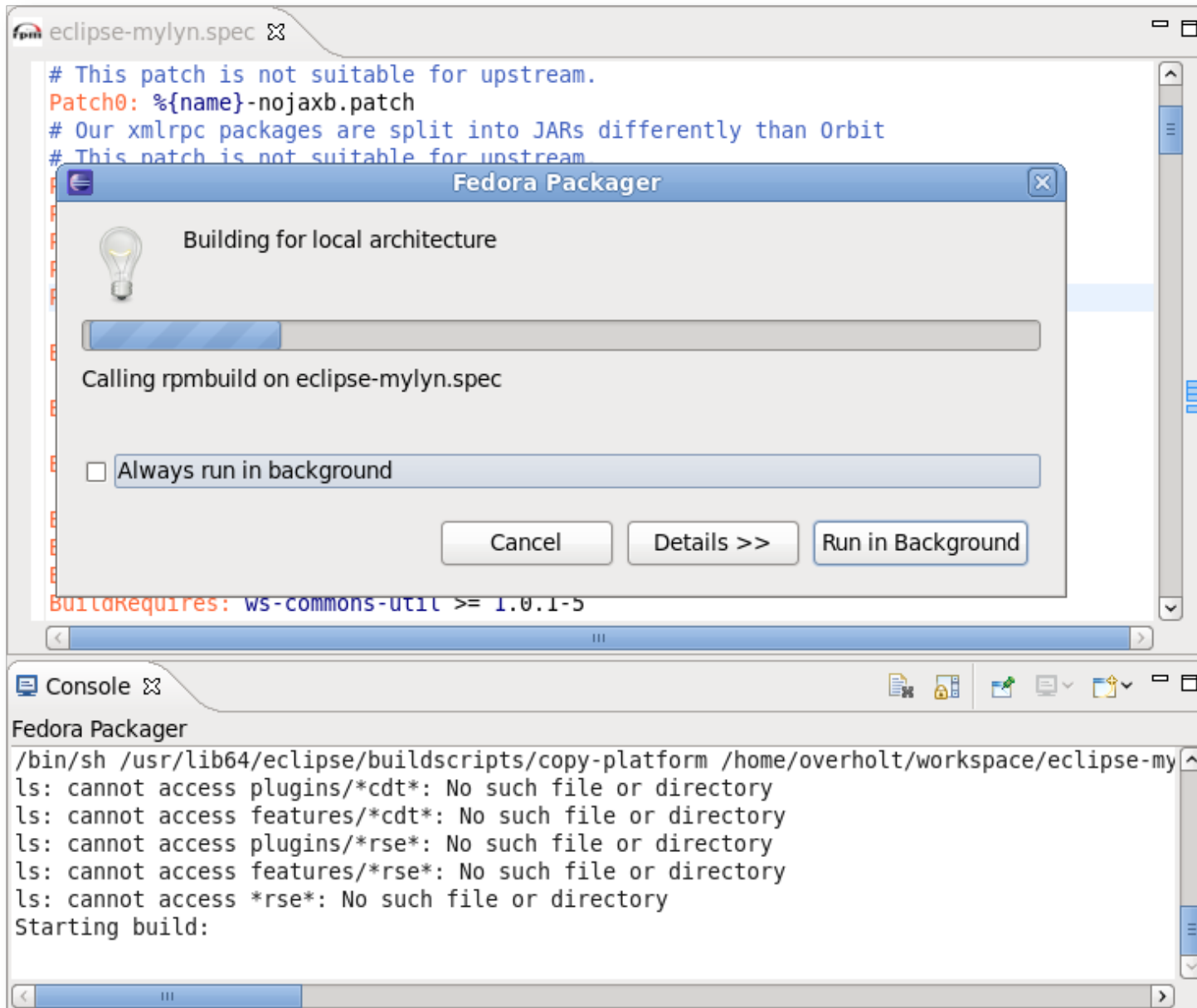


```
BuildRequires: xulrunner-devel
BuildRequires: java-1.6.0-openjdk
%if !%{bootstrap}
BuildRequires: icu4
BuildRequires: tomcat
BuildRequires: tomcat
BuildRequires: ant-a
BuildRequires: ant-j
BuildRequires: jsch
BuildRequires: jakarta
BuildRequires: jakarta
BuildRequires: jakarta
BuildRequires: jakarta
BuildRequires: jetty
BuildRequires: lucene
```

 java-1.6.0-openjdk	Name: java-1.6.0-openjdk Version: 1.6.0.0 Release: 37.b17.fc12 Summary: OpenJDK Runtime Environment License: GPLv2 with exceptions Group: Development/Languages URL: http://icedtea.classpath.org/ Installation Date: Fri 16 Apr 2010 08:49:20 AM EDT Vendor: Fedora Project Size: 83807713 bytes Build Date: Tue 06 Apr 2010 07:49:09 AM EDT SRPM: java-1.6.0-openjdk-1.6.0.0-37.b17.fc12.src.rpm
---	---



Local Builds



The screenshot shows the Eclipse IDE interface. The top window, titled "eclipse-mylyn.spec", contains the following text:

```
# This patch is not suitable for upstream.  
Patch0: %{name}-nojaxb.patch  
# Our xmlrpc packages are split into JARs differently than Orbit  
# This patch is not suitable for upstream
```

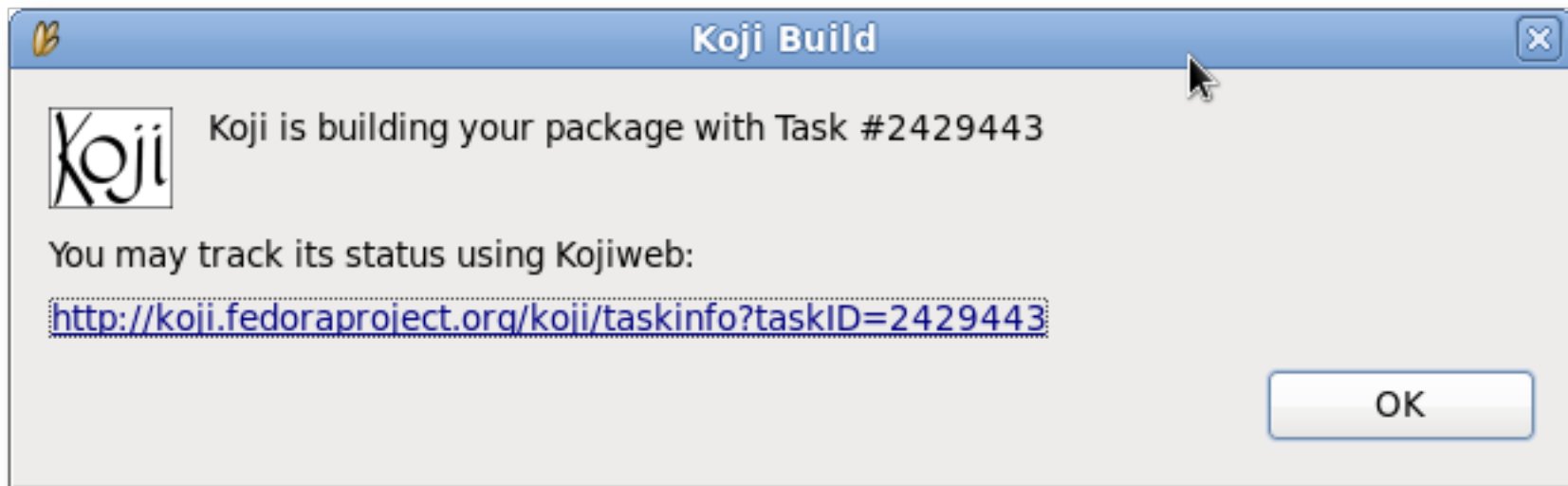
A "Fedora Packager" dialog box is overlaid on top. It features a lightbulb icon and the text "Building for local architecture". Below this is a progress bar and the text "Calling rpmbuild on eclipse-mylyn.spec". There is a checkbox labeled "Always run in background" which is currently unchecked. At the bottom of the dialog are three buttons: "Cancel", "Details >>", and "Run in Background".

Below the dialog box, the console window is visible. It shows the output of the build process:

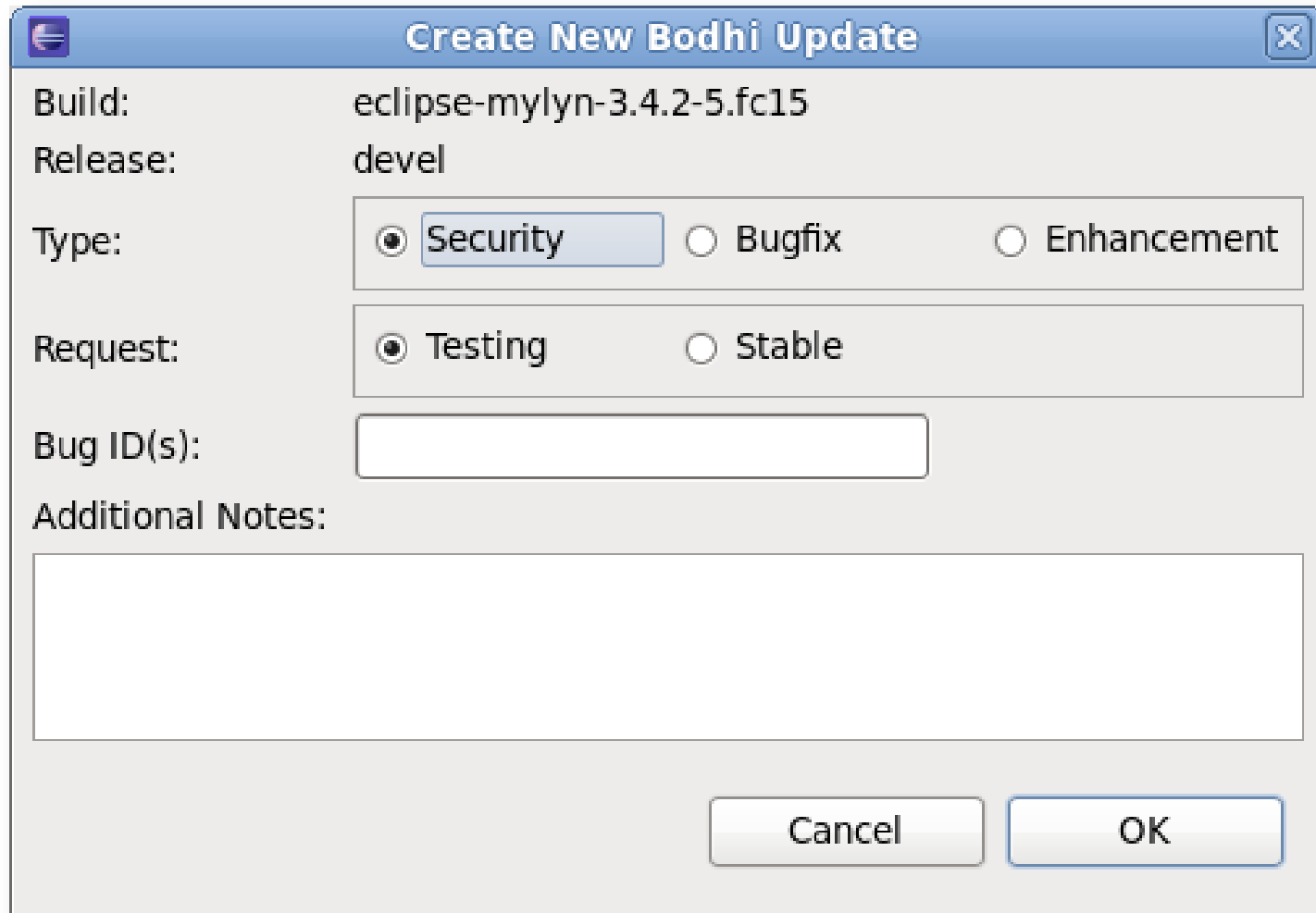
```
BuildRequires: ws-commons-util >= 1.0.1-5  
Fedora Packager  
/bin/sh /usr/lib64/eclipse/buildscripts/copy-platform /home/overholt/workspace/eclipse-my  
ls: cannot access plugins/*cdt*: No such file or directory  
ls: cannot access features/*cdt*: No such file or directory  
ls: cannot access plugins/*rse*: No such file or directory  
ls: cannot access features/*rse*: No such file or directory  
ls: cannot access *rse*: No such file or directory  
Starting build:
```



Build System



Updates System



Create New Bodhi Update

Build: eclipse-mylyn-3.4.2-5.fc15

Release: devel

Type: Security Bugfix Enhancement

Request: Testing Stable

Bug ID(s):

Additional Notes:

Cancel OK



Future Work

- Bugzilla integration (Mylyn)
- RCP app
- Eclipse Fedora Packager perspective
- A lot more cool new features :)



Getting Involved...

Web/Trac:

<https://fedorahosted.org/eclipse-fedorapackager/>

p2 Update Site:

<http://fedorapeople.org/~jerboaa/eclipse-fedorapackager-p2-composite-repo/>

Mailing list:

<https://admin.fedoraproject.org/mailman/listinfo/eclipse-packager-devel>

Git:

```
git://git.fedorahosted.org/git/eclipse-  
fedorapackager.git
```



Thank You!



Questions?

