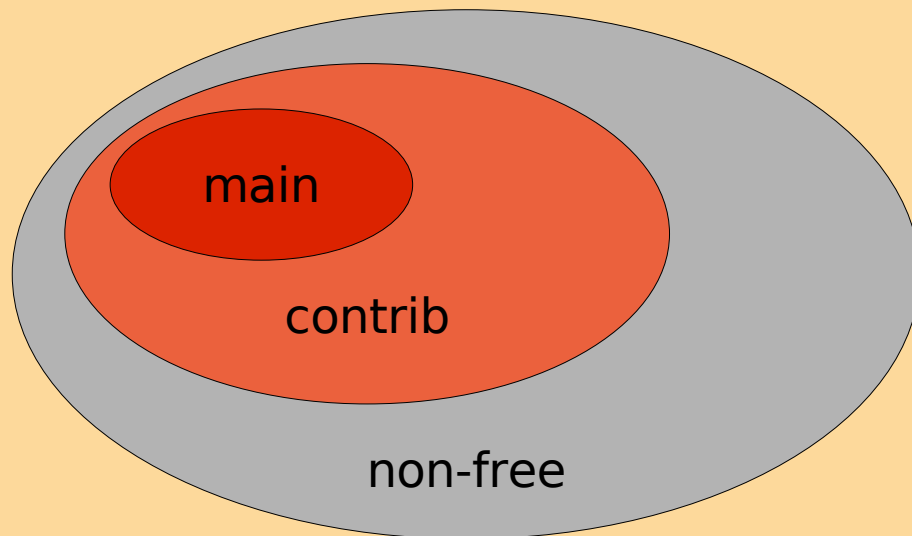
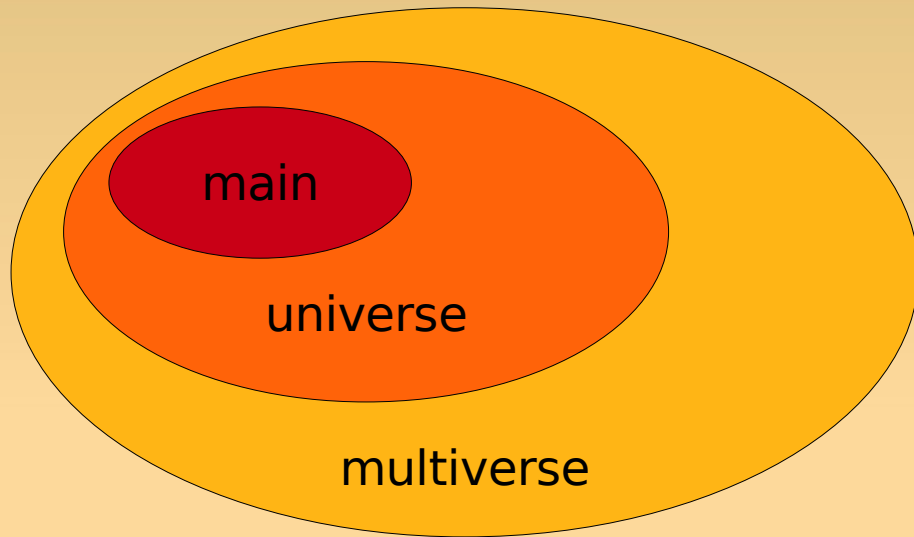


Packaging Java in Debian/Ubuntu

Matthias Klose

doko@debian.org / doko@ubuntu.com

Archive structure



- Archive structured in sections:
 - main, universe: free sw
 - contrib: frees sw, b-d on non-free
 - multiverse, non-free: other distributable sw
- Dependencies must be fulfilled within a section
- Build-dependencies must be fulfilled within a section
- No dependencies to the outside

Architecture support

- Many runtimes (not all shown), not all for all architectures.
- Preference of a runtime per platform
- Preference of a sdk per platform at build time

	Debian	Ubuntu	gcj	sun	kafe	cacao
amd64	✓	✓	✓	✓	✓	✓
ix86	✓	✓	✓	✓	✓	✓
powerpc	✓	✓	✓		(✓)	✓
sparc	✓	✓	✓		✓	
alpha	✓		✓		(✓)	✓
arm	✓		✓			
hppa	(✓)	(✓)	✓			
ia64	✓	(✓)	✓	(✓)	(✓)	
m68k	✓		✓		(✓)	
mips(el)	✓		✓		(✓)	
s390	✓		✓		(✓)	
hurd-i386						
kfreebsd-i386	✓		✓		(✓)	✓

Packaging (simplified)

- Java packaging policy
- “specfile”: debian directory (changelog, copyright, rules, control)

```
libxerces2-java (2.8.1-1ubuntu1) feisty; urgency=low
```

```
* Merge with Debian unstable; remaining changes:  
  - Build -gcj package.
```

```
-- Matthias Klose <doko@ubuntu.com> Mon, 4 Dec 2006 17:37:55 +0100  
[...]
```

```
Source downloaded from <http://xerces.apache.org/xerces2-j/> ...
```

```
Maintained by the Debian Java Maintainers
```

```
Copyright (C) 1999-2006 The Apache Software Foundation.
```

```
Copyright (C) 2000-2001 World Wide Web Consortium.
```

```
[...]
```

Packaging

- debian/rules (using cdb's helper)

```
#!/usr/bin/make -f

include /usr/share/cdb's/1/rules/debhelper.mk
include /usr/share/cdb's/1/class/ant.mk

JAVA_HOME := /usr/lib/jvm/java-gcj
ANT_HOME  := /usr/share/ant

DEB_JARS := xml-commons-resolver-1.1 jaxp-1.3.jar

install/libxerces2-java::
    mkdir -p debian/libxerces2-java/usr/share/java
    install -m 644 build/xercesImpl.jar debian/libxerces2-
java/usr/share/java/

install/libxerces2-java-gcj:: install/libxerces2-java
    dh_nativejava -plibxerces2-java-gcj

clean::
    rm -rf build
```

Packaging

- debian/control (meta information)

```
Source: libxerces2-java
Section: libs
Priority: optional
Maintainer: Debian Java Maintainers <...@lists.alioth.debian.org>
Build-Depends: cdb (>= 0.4.8), debhelper (>= 4.2.0), java-gcj-compat-dev, ant, libxml-commons-resolver1.1-java, libjaxp1.3-java
```

```
Package: libxerces2-java
Architecture: all
Depends: gij | java-gcj-compat | java1-runtime | java2-runtime,
        libjaxp1.3-java
Recommends: libxerces2-java-gcj
Suggests: libxerces2-java-doc
Description: Validating XML parser for Java with DOM level 3 support
The Xerces2 Java parser is the reference implementation of XNI, the
[...]
```

```
Package: libxerces2-java-gcj
Architecture: any
Depends: libxerces2-java (>= ${source:Version}), libjaxp1.3-java-gcj,
        ${misc:Depends}, ${shlibs:Depends}
Description: Validating XML parser for Java (native code)
```

Packaging problems (distribution)

- Not many packages available (about 300 java related)
- Introducing a new package requires packaging of build dependencies first ...
- Human resources (maintaining packages) are rare, compared to other developer communities for free software.
- External repositories (like jpackage) are not available for the dpkg format.
- Support for multiple versions of a library
 - A distribution is interested in one version, maybe two.
 - Packages require other versions not in the distribution.

Packaging problems (packages)

- Upstream packages, build problems
 - Come without or incomplete build rules
 - .jar and .class included in source (does the package build from source)?
 - third party sw included (precompiled) in source
 - “1.5 compatible”, depending on “sun.*” classes
 - currently no javadoc for 1.5
- Upstream packages, runtime problems
 - No support for user-independent installations (only knows about \$HOME, assumes writer permissions everywhere)
 - Packages come with their own plugin/upgrade mechanisms, sidestepping the system tools

Packaging problems (runtime/sdk)

- No.1: No runtime/sdk for recent Java version (yet) available.
- No “best” runtime/sdk across architectures
 - needs selection of default runtime per architecture
- Some applications are “sensitive” to specific runtimes
 - needs selection of default runtime (per application)
- Packaging for headless/desktop machines
 - Only necessary installations required by administrators.
 - Complete installation expected by desktop users.

Outlook

- Recent free Java version will be available
 - not on all platforms and architectures.
- GCJ starting to support 1.5 features
- Something to work on this year ...

Questions / Discussion