

## Creating a Debian Game Package

- these notes do not include actually writing the game!
  - the game is assumed to be written and full debugged
- all we are considering is how best to package the source, data
  - and how to install the game sensibly

## Why use packages at all?

- in the past source code was downloaded and built from `foo.tar.gz` (often called tarballs)
  - some distributions still use this mechanism
  - normally an activity reserved for enthusiasts or developers
- although occasionally experienced GNU/Linux users will do this to work around a bug or dependency problem
- Debian package management software is superb

## Advantage of Debian packages

- can reference multiple repositories in `/etc/apt/sources.list`

- ```
deb http://ftp.uk.debian.org/debian/ squeeze main contrib
deb-src http://ftp.uk.debian.org/debian/ squeeze main con
deb http://security.debian.org/ squeeze/updates main cont
deb-src http://security.debian.org/ squeeze/updates main
# deb http://www.debian-multimedia.org squeeze main non-f
#
# GNU Modula-2 repo
#
deb http://floppsie.comp.glam.ac.uk/debian/ squeeze main
deb-src http://floppsie.comp.glam.ac.uk/debian/ squeeze m
```

## Advantage of Debian packages

- possible to request a machine to update its complete list of packages and install updates
  - each time it boots up
  - this is done in the labs, and nobody notices the updates
  - contrast this with shutting down a Windows client :-)

## Advantage of Debian packages

- a well formed Debian package allow you to
  - rebuild it with minimal effort
  - obtain the source
  
- rev the source and rebuild
  - possibly support multiple architectures
  - includes all correct package dependencies

## Example

- ```
$ sudo apt-get update
```
  
- ```
$ sudo apt-get install halma
```
  
- installs the package halma
  - it will also ensure the dependencies  
Python/PyGame are installed
  
- ```
$ sudo apt-get remove halma
```

## Example

- ```
$ apt-get source halma
```
  
- obtains the current source for the package halma

## Halma package contents

- ```
$ apt-get source halma
$ ls -ld halma*
drwxr-xr-x 6 fred fred 4096 Mar 17 2011 halma-0.0.1
-rw-r--r-- 1 fred fred 524 Nov 22 18:12 halma_0.0.1-1
-rw-r--r-- 1 fred fred 94023 Nov 22 18:13 halma_0.0.1-1
```
  
- halma\_0.0.1-1.10.dsc a description of the package, including version, maintainers email address, dependencies, tarball filename

## Halma package contents

```
$ ls halma-0.0.1
config.guess  configure      data           desktop
Makefile     version.c     config.sub     configure.in
debian       gameEngine.py gui.py         halma.in
halma.mod    Makefile.in   pixmaps
```

- examine these files during lab times

## Package related files

- held in the directory debian

```
$ ls -ltr halma-0.0.1/debian/
-rw-r--r-- 1 fred fred 18 Mar 15 2011 dirs
-rwxr-xr-x 1 fred fred 441 Mar 16 2011 rules
-rw-r--r-- 1 fred fred 91 Mar 16 2011 menu
-rw-r--r-- 1 fred fred 764 Mar 17 2011 control
-rw-r--r-- 1 fred fred 1886 Mar 17 2011 changelog
```

## dirs

```
usr/bin
usr/share
```

- details the subdirectories where the contents will reside once installed

## menu

```
$ cat halma-0.0.1/debian/menu
?package(halma):needs="X11" section="Games/Toys" \
title="halma" command="/usr/bin/halma"
```

## ChangeLog

```
$ cat halma-0.0.1/debian/changelog
-- Fred <fred@somewhere.org> Wed, 16 Mar 2011 20:47:24

halma (0.0.1-1.4) unstable; urgency=low

* Non-maintainer upload.
* corrected menu entry.
```

## Control

```
$ cat halma-0.0.1/debian/control
Source: halma
Section: games
Priority: extra
Maintainer: Fred <fred@somewhere.org>
Build-Depends: debhelper (>= 5), autotools-dev, dbs (>=0.22), texinfo,
gcc, python, python-pygame, gm2
Standards-Version: 3.7.2

Package: halma
Architecture: any
Depends: ${shlibs:Depends}, ${misc:Depends}, python-pygame, python-pygame
Suggests:
Conflicts:
Description: The Victorian board game Halma.
 A two player game where the object is to move your pieces into the
 base of the opposing player. In this variant of the game (Kangaroo)
 you may jump multiple squares so long as both sides are symmetrica
 A tactical game which typically lasts between 10 and 15 minutes.
 play red, the computer plays blue and the computer will make a mov
 every 10 seconds.
```

## Building the package

- further reading ([http://www.nongnu.org/gm2/creating\\_packages.html#section9](http://www.nongnu.org/gm2/creating_packages.html#section9)) and (<http://people.connexer.com/~roberto/howtos/debcustomize>)
- install pbuilder and re-create an up to date copy

```
$ sudo pbuilder create
$ wget http://floppsie.comp.glam.ac.uk/download/scripts/m
$ wget http://floppsie.comp.glam.ac.uk/download/scripts/m
$ cd halma-0.0.1
$ bash ../myrevdeb
$ bash ../mypdebbuild
```

- will build a new version of halma which is placed into `/usr/local/src/results`