Upgrading & Updating Your Computer with Debian's APT

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Microsoft Windows has Windows Update.

Windows Update pro’s:

Automatic (although this can also be a con)

Easy to use (unless it doesn't work right)

Windows Update con’s:

Sometimes forces you to accept onerous licensing terms in order to get an important fix

Sometimes labels things as important fixes which aren’t

You have no idea what files are being updated, changed, & installed on your computer

Only updates MSFT's software and a few drivers

Almost always requires a reboot

Apple Mac OS X has Auto Update.

Auto Update pro’s:

Automatic

Easy to use

Auto Update con’s:

Often requires a reboot

You have no idea what files are being updated, changed, or installed on your computer

Only updates Apple's software

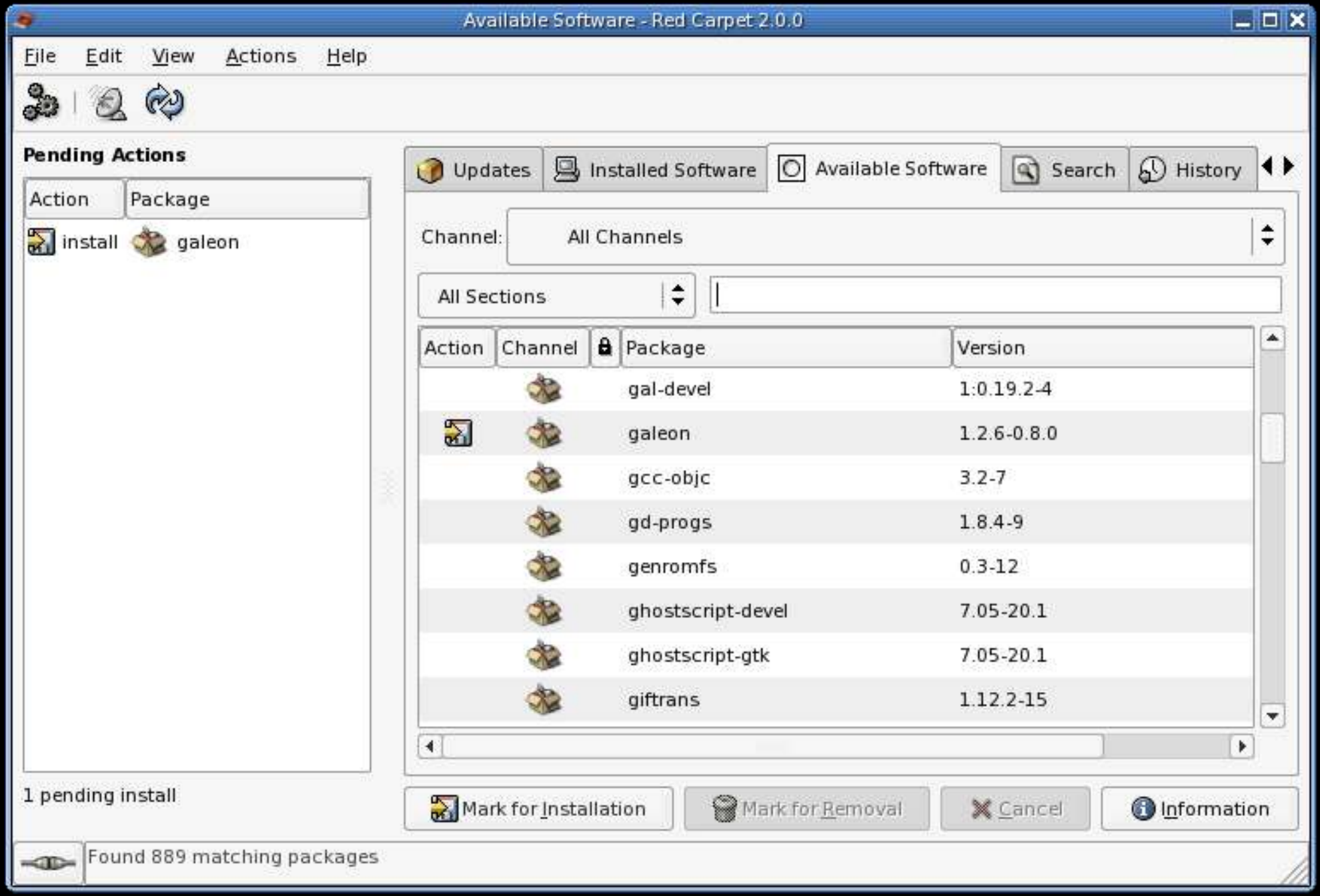
Linux, of course, gives you several options.

Ximian Red Carpet

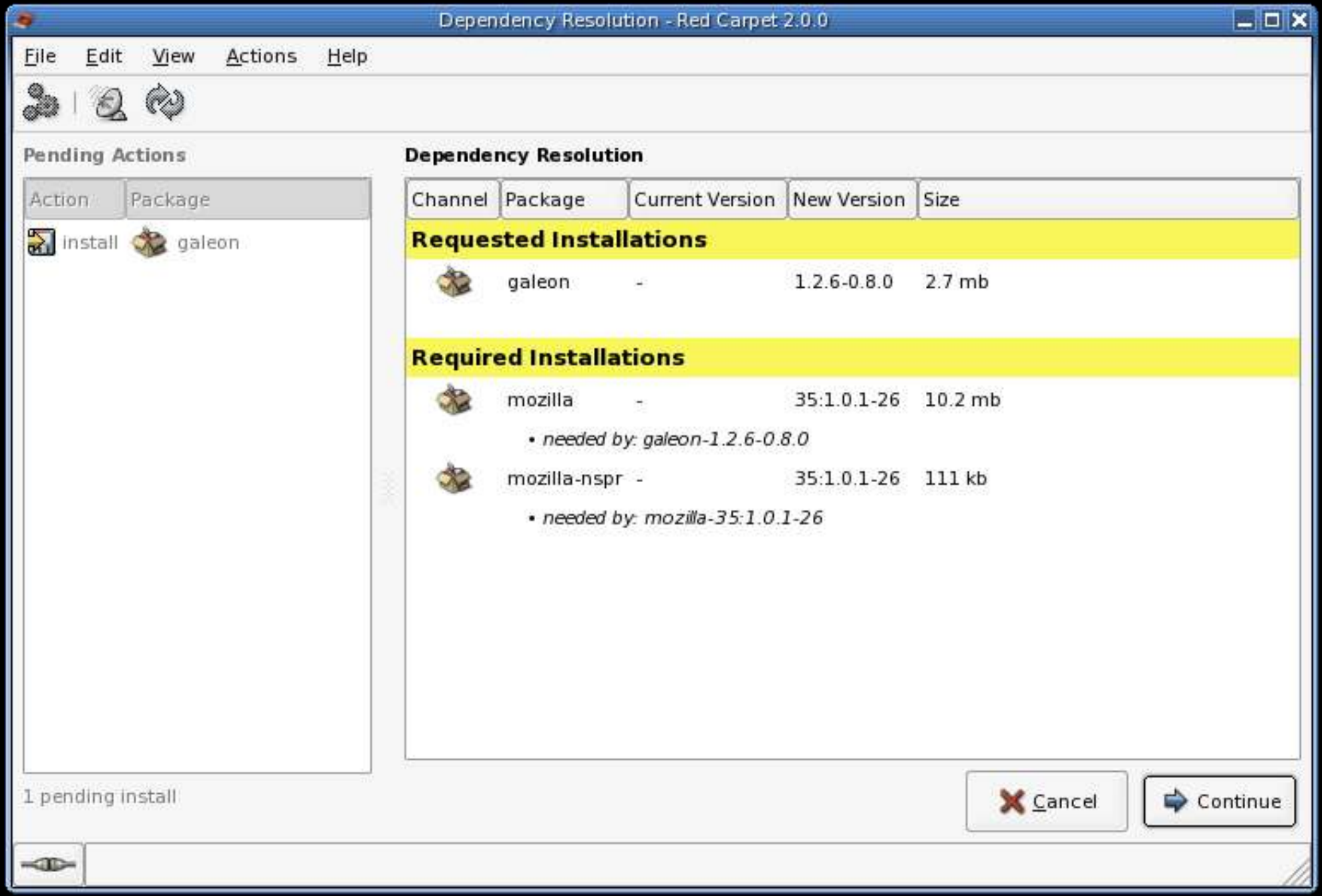
http://www.ximian.com/products/redcarpet/

Subscribe to channels

Search, install, & remove software



Resolves dependencies



Ximian Red Carpet pro's:

Free

Easy to use

Updates virtually all system software & lots of 3rd party software

Command-line client, but still in development

Ximian Red Carpet con's:

Runs only on Red Hat 7-9, Red Hat Enterprise, Fedora Core, Mandrake 9, & SUSE

Slow

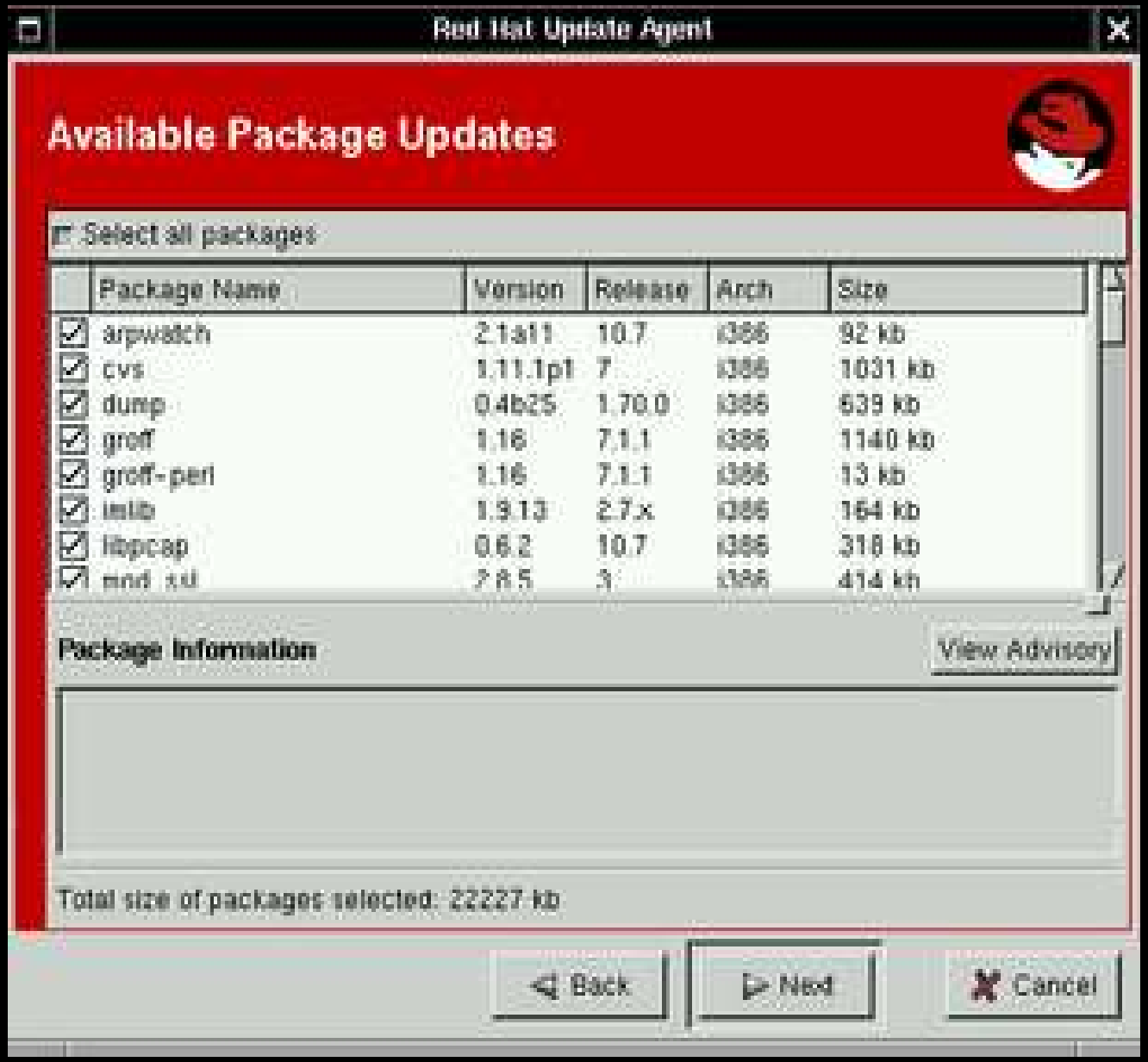
"Ximianizes" your system (not so much any longer)

Ximian Red Carpet Enterprise

Designed to manage software installations on multiple workstations

Red Hat/Fedora Core Update Agent, up2date

Update software



up2date con’s:

Clumsy & poorly designed

Must register with Red Hat

SUSE’s YOU: YaST2 Online Update

Get information about software updates

YaST2 Online Update pro's:

Free

Easy to use

Can be configured to work automatically

Updates all software included with SUSE system

YaST2 Online Update con’s:

Only updates SUSE system software; no 3rd party software

Sometimes slow to connect to servers

Debian APT
(Advanced Package Tool)

How APT works

Install new packages, update already-installed packages, & remove packages you no longer want.

If there are dependencies, APT resolves them.

You can update the entire distribution.

APT pro’s:

Free

Command-line & GUI tools available

Powerful

Can update virtually every piece of software on your system: 16,000+ packages are currently available!

APT is native to Debian, but it has ported over to work with RPM-based systems (Red Hat & SUSE)

APT con’s:

Robert, being a weenie, has a hard time understanding it :)

Can be difficult to master all the in’s & out’s

Files on your system used by APT

`/etc/apt/sources.list`

Contains the list of APT repositories, where the software is (may be on Net, LAN, CD, or local)

`/etc/apt/preferences`

Allows you to set “pinning” order (more on that later)

`/etc/apt/apt.conf`

Set configuration options for APT

Let's take a look at your APT system files

```
cat /etc/apt/sources.list | less
```

(Press space or f to go down a screen at a time,
b to go back up a screen at a time,
& p to go back to the 1st screen
... or you can use the arrow keys
to move one line at a time;
press q to quit)

```
cat /etc/apt/preferences | less
```

```
cat /etc/apt/apt.conf | less
```

Using APT on the command line
(all commands run as root)

`apt-get update`

1st time run, it downloads files from repositories containing lists of software.

After that, it compares installed software to the repositories.

A. If similar, repository file is skipped
B. If different, repository file is downloaded

`apt-get upgrade`

Downloads & installs any software upgrades.

If there are dependencies, it tells you about them & asks you if you want to download them.

Software that is “kept back” requires your explicit request for installation.

You’re going to be running the previous two commands a lot.

Much easier to create an alias in your .bashrc file.

```
alias upgrade='apt-get update &&
apt-get upgrade'
```

If update succeeds, upgrade commences. If update fails, upgrade will not commence.

Want to simulate an upgrade without actually doing it, just so you can see what would happen?

```
apt-get upgrade -s
```

(by the way, `-s` works for just about every apt-get command, so feel free to try it with something you're not sure of)

`apt-cache search search-word(s)`

Shows package(s) whose name or description matches search-word(s).

`apt-cache show package-name`

Shows information about package(s) currently installed & what's available to install.

`apt-cache showpkg package-name`

Shows information about package(s) referenced, including versions and dependencies.

`apt-get install package-name`

Installs requested package(s).

Example:
apt-get install gcc-3.3 gcc-3.3-base

(As soon as you install Libranet, run this – `apt-get install apt` – which upgrades APT)

`apt-get remove package-name`

Removes requested package(s)

Example:
apt-get remove gcc-3.3 gcc-3.3-base

Sick of answering a million questions every time you install or upgrade packages?

The program that asks those questions is “debconf”.

```
dpkg-reconfigure debconf
```

Reconfigures debconf so it only asks you important questions.

Choose “Critical” & you’ll be asked far fewer questions.

Here's a tip: if you ever want to answer questions for any package again, try dpkg-reconfigure.

```
dpkg-reconfigure package-name
```

One really great feature of APT occurs when you install this:

```
apt-get install apt-listbugs
```

Now when you run APT, packages will be downloaded, but before installation, APT will check Debian's buglist to see if there are any showstopper bugs for any of your packages.

If there are bugs, you will be warned & asked if you wish to proceed.

If apt-listbugs does find bugs, copy the number of the bug & enter it in at http://www.debian.org/Bugs to see the status of the bug.

Sometimes it might not be such a big deal, and you can safely go ahead and install the package.

Sometimes it would be a hugely disastrous deal, and you wait until the bug is resolved!

Using APT with a GUI: Synaptic

Synaptic is already included with Libranet,
but if it wasn't:

```
apt-get install synaptic
```

To run Synaptic from the command line (as root):

```
synaptic &
```

To run Synaptic using the GUI:

K menu > System > Debian > Synaptic Package Manager

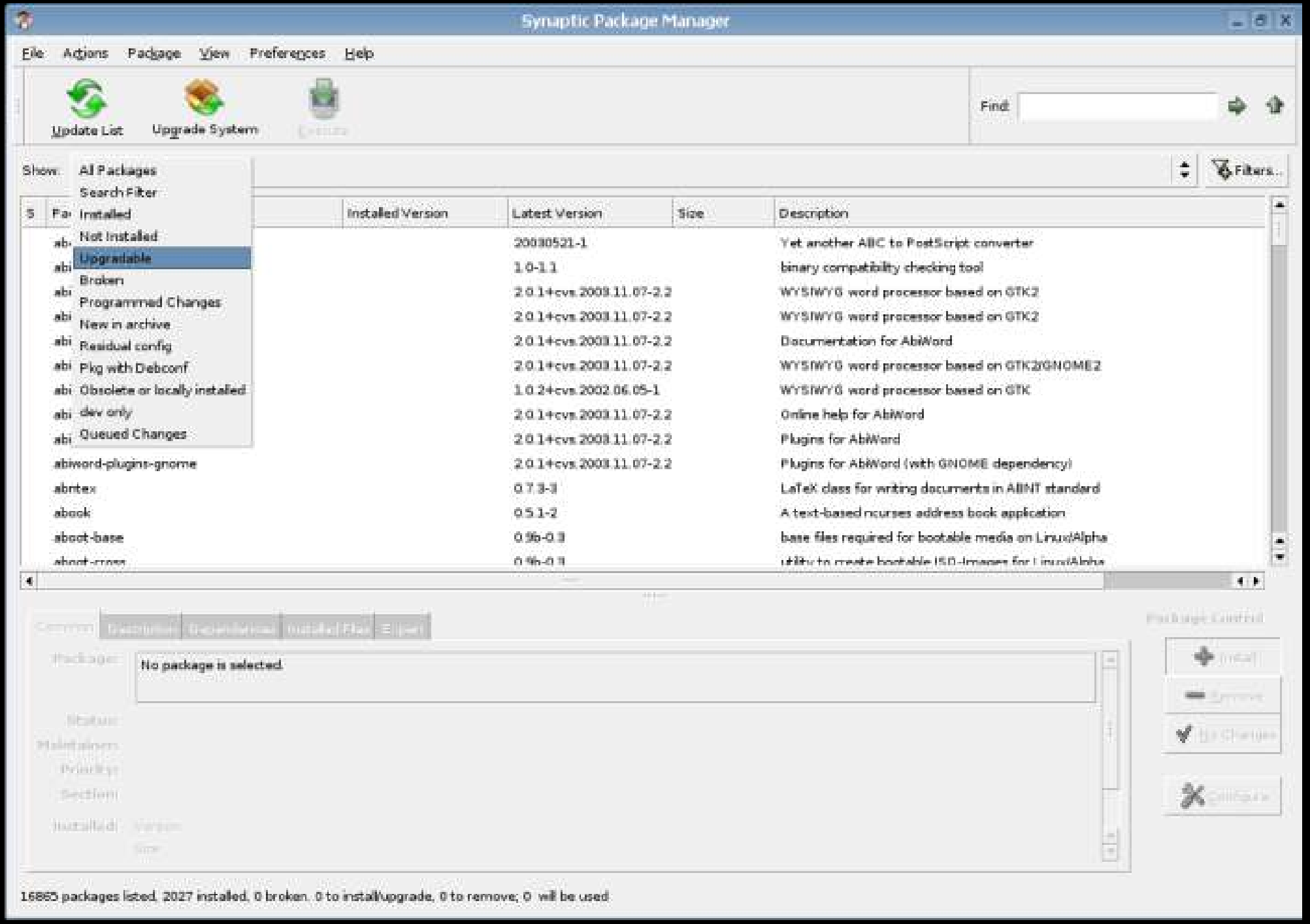
or

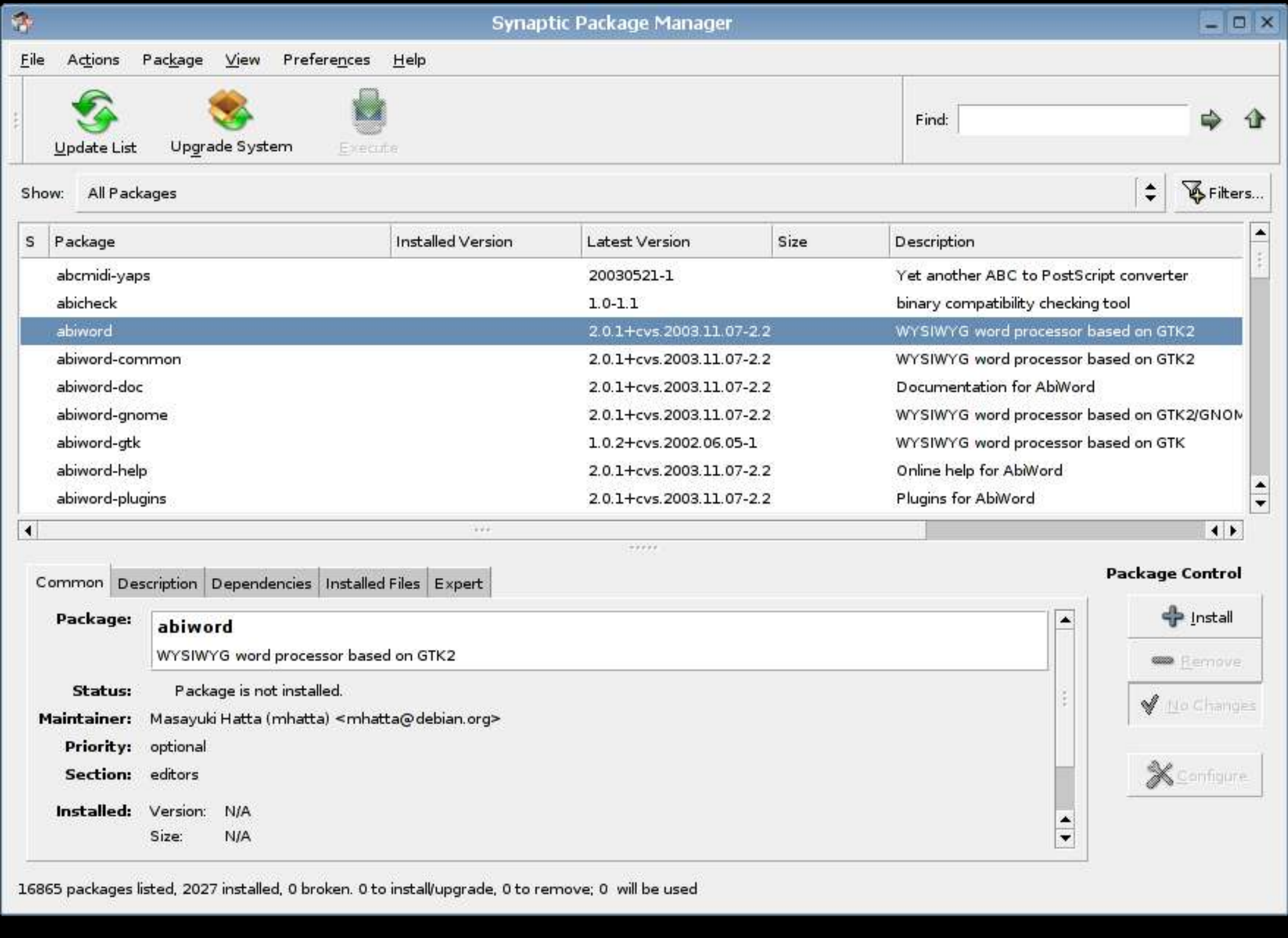
K menu > System > Synaptic Package Manager

Configure Synaptic

View menu > Flat List

Choose which packages you want to see




Synaptic Package Manager
File Actions Package View Preferences Help
Update List
Upgrade System
Execute
Find:
Show: All Packages
Filters...
S Package Installed Version Latest Version Size Description
abcmidi-yaps 20030521-1 Yet another ABC to PostScript converter
abicheck 1.0-1.1 binary compatibility checking tool
abiword 2.0.1+cvs.2003.11.07-2.2 WYSIWYG word processor based on GTK2
abiword-common 2.0.1+cvs.2003.11.07-2.2 WYSIWYG word processor based on GTK2
abiword-doc 2.0.1+cvs.2003.11.07-2.2 Documentation for AbiWord
abiword-gnome 2.0.1+cvs.2003.11.07-2.2 WYSIWYG word processor based on GTK2/GNOM
abiword-gtk 1.0.2+cvs.2002.06.05-1 WYSIWYG word processor based on GTK
abiword-help 2.0.1+cvs.2003.11.07-2.2 Online help for AbiWord
abiword-plugins 2.0.1+cvs.2003.11.07-2.2 Plugins for AbiWord
Common Description Dependencies Installed Files Expert
Package: abiword
WYSIWYG word processor based on GTK2
Status: Package is not installed.
Maintainer: Masayuki Hatta (mhatta) <mhatta@debian.org>
Priority: optional
Section: editors
Installed: Version: N/A
Size: N/A
Package Control
Install
Remove
No Changes
Configure
16865 packages listed, 2027 installed, 0 broken. 0 to install/upgrade, 0 to remove; 0 will be used

To understand APT Pinning,
we first need to talk about
the three (really, four)
Debian releases.

In order, from most stable to most bleeding edge:

1. Woody, aka Stable
2. Sarge, aka Testing
3. Sid, aka Unstable
4. Experimental

```
apt-get upgrade -t unstable
```

Shows you all upgrades currently available in Sid (an enormous list).

If you say “Y”, you will be running a straight Sid system, instead of the mixed Woody/Sarge/Sid system that is Libranet.

Therefore, say “n” & pick & choose as needed.

```
apt-get install widget foobar -t
unstable
```

Installs packages widget & foobar from Sid.

If other packages are needed, they will be downloaded & installed.

After a while, you're going to have a lot of installers (deb packages) on your computer.

They're located in /var/cache/apt/archives/

```
apt-get clean
```

Removes the previously installed deb's.

APT resources

APT HOWTO
http://www.debian.org/doc/manuals/apt-howto/index.en.html

A Very Apropos *apt*
http://www.linux-mag.com/2003-10/apt_01.html
(Focuses on APT for RPM, but still relevant to Debian-users)

Thank you!

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