

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

Available Software - Red Carpet 2.0.0

File Edit View Actions Help

Pending Actions

Action	Package
install	galeon

Channel: All Channels

All Sections

Action	Channel	Package	Version
		gal-devel	1:0.19.2-4
install		galeon	1.2.6-0.8.0
		gcc-objc	3.2-7
		gd-progs	1.8.4-9
		genromfs	0.3-12
		ghostscript-devel	7.05-20.1
		ghostscript-gtk	7.05-20.1
		giftrans	1.12.2-15

1 pending install


Found 889 matching packages

Mark for Installation Mark for Removal Cancel Information



Resolves dependencies

Dependency Resolution - Red Carpet 2.0.0

File Edit View Actions Help








Pending Actions

Action	Package
 install	 galeon

1 pending install

Dependency Resolution

Channel	Package	Current Version	New Version	Size
Requested Installations				
	galeon	-	1.2.6-0.8.0	2.7 mb
Required Installations				
	mozilla	-	35:1.0.1-26	10.2 mb
• <i>needed by: galeon-1.2.6-0.8.0</i>				
	mozilla-nspr	-	35:1.0.1-26	111 kb
• <i>needed by: mozilla-35:1.0.1-26</i>				

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

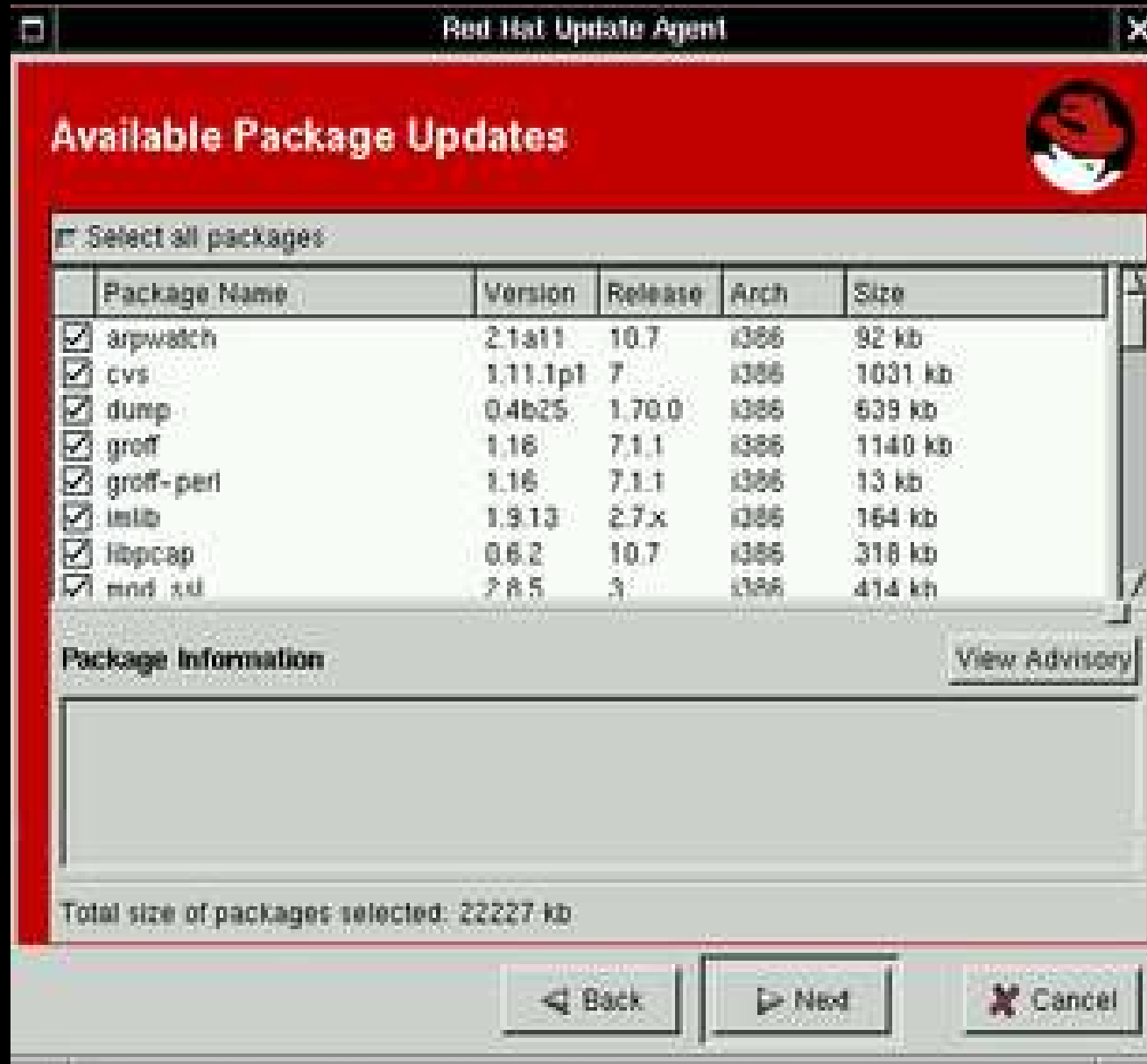
“Ximianizes” your system (not so much any longer)

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



The screenshot shows the YaST Online Update (YOU) window. The title bar reads "YaST2". The main window has a header with the YaST logo and "Online Update" text, and the SuSE logo in the top right corner. The main content area is titled "Welcome to YaST Online Update" and contains a "System Information" box with the following details:

- Last successful update was performed less than one day ago.
- Product: SuSE Linux
- Version: 9.0
- Base Architecture: i386

A modal dialog box titled "YaST2" is open in the foreground, displaying "Retrieving information about new updates..." with a progress bar at 0% and an "Abort" button. Below the dialog, a text field shows the URL "http://ftp.leo.org/download/pub/comp/os/unix/linux/suse/suse". There are buttons for "New Server..." and "Edit Server...". Two checkboxes are visible: " Manually Select Patches" and " Reload All Patches from Server". A "Configure Fully Automatic Update..." button is at the bottom of the dialog.

At the bottom of the main window, there are three buttons: "Back", "Abort Update", and "Next".

YaST Online Update

YaST Online Update (YOU) is the easy way to get all recommended patches and security fixes from a SuSE update server.

If **Manually Select Patches** is checked, all available patches will be shown from which to select the patches to install.

If **Reload All Patches from Server** is checked, all patches will be fetched from the server even when they already are locally available from a previous download.

After clicking **New Server**, select a local installation source instead of an FTP or HTTP server or select another FTP or HTTP server. Click **Edit Server** to edit the location of the selected server.

Clicking **Configure Fully Automatic Update** opens a dialog in which to configure YOU to check for updates once a day and automatically download and install updates when new ones are available without the need of user interaction.

System Information

Last successful update was performed less than one day ago.

Product: SuSE Linux

Version: 9.0

Base Architecture: i386

Retrieving information about new updates...

0%

Abort

unix/linux/suse/suse

http://ftp.leo.org/download/pub/comp/os/unix/linux/suse/suse

New Server... Edit Server...

Manually Select Patches

Reload All Patches from Server

Configure Fully Automatic Update...

Back Abort Update Next

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

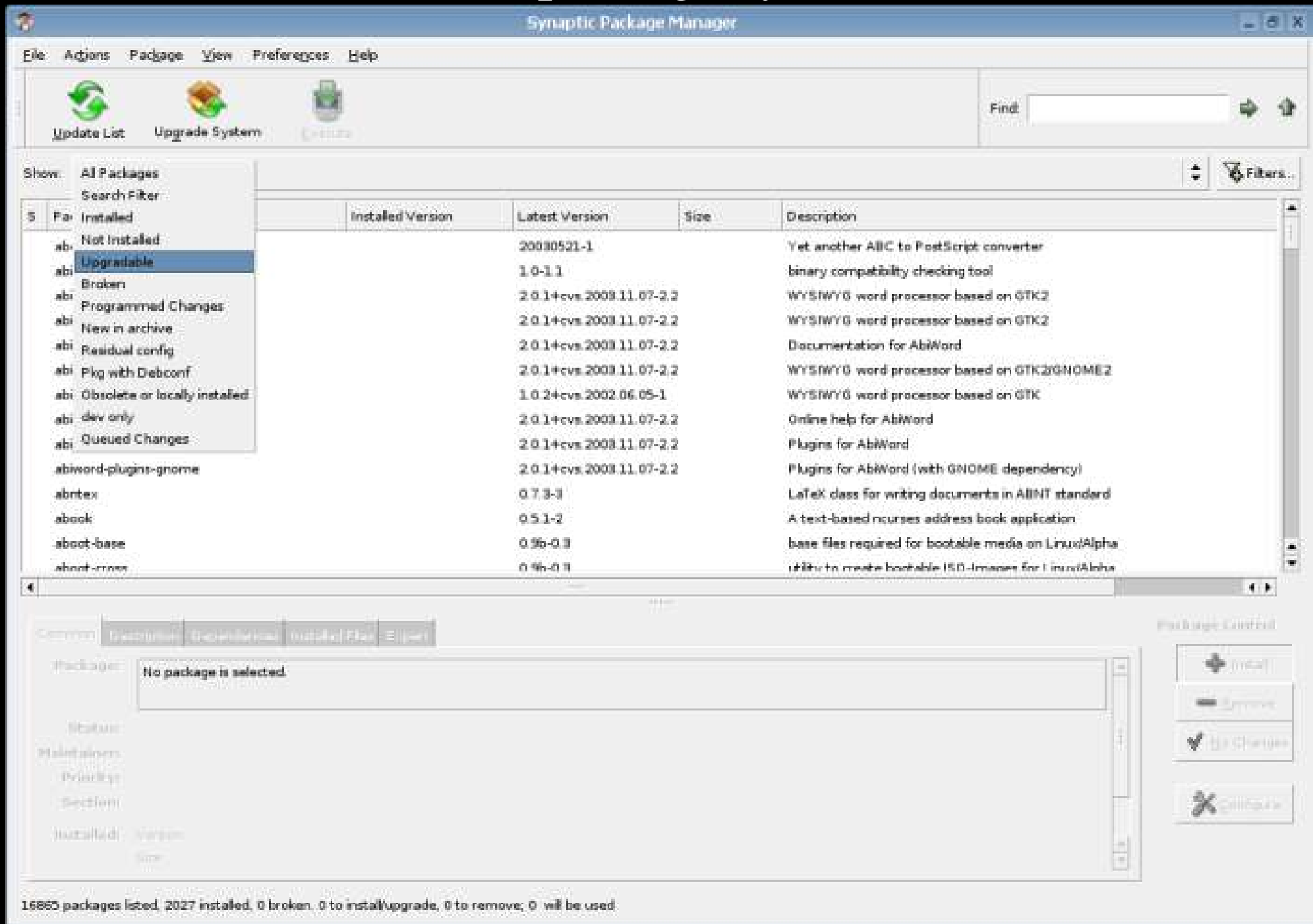
or

K menu > System > Synaptic Package Manager

Configure Synaptic

View menu > Flat List

Choose which packages you want to see



The screenshot shows the Synaptic Package Manager interface. At the top, there are menu options: File, Actions, Package, View, Preferences, and Help. Below the menu is a toolbar with icons for Update List, Upgrade System, and a search icon. A search box is located on the right side of the toolbar.

The main window displays a list of packages. A dropdown menu is open on the left, showing various filter options. The 'Upgradable' option is selected. The list of packages is as follows:

S	Pa	Installed	Installed Version	Latest Version	Size	Description
	abi	Not Installed		20080521-1		Yet another ALC to PostScript converter
	abi	Upgradable		1.0-1.1		binary compatibility checking tool
	abi	Broken		2.0.14+cvs.2008.11.07-2.2		WYSIWYG word processor based on GTK2
	abi	Programmed Changes		2.0.14+cvs.2008.11.07-2.2		WYSIWYG word processor based on GTK2
	abi	New in archive		2.0.14+cvs.2008.11.07-2.2		Documentation for AbiWord
	abi	Residual config		2.0.14+cvs.2008.11.07-2.2		WYSIWYG word processor based on GTK2/GNOME2
	abi	Pkg with Debconf		1.0.24+cvs.2002.06.05-1		WYSIWYG word processor based on GTK
	abi	Obsolete or locally installed		2.0.14+cvs.2008.11.07-2.2		Online help for AbiWord
	abi	dev only		2.0.14+cvs.2008.11.07-2.2		Plugins for AbiWord
	abi	Queued Changes		2.0.14+cvs.2008.11.07-2.2		Plugins for AbiWord (with GNOME dependency)
	abiword-plugins-gnome			0.7.3-3		LaTeX class for writing documents in A4NT standard
	abrtex			0.5.1-2		A text-based ncurses address book application
	abook			0.96-0.3		base files required for bootable media on Linux/Alpha
	aboot-base			0.96-0.3		utility to create bootable ISO-images for Linux/Alpha

At the bottom of the window, there is a status bar that reads: "16865 packages listed, 2027 installed, 0 broken, 0 to install/upgrade, 0 to remove, 0 will be used."

Synaptic Package Manager

File Actions Package View Preferences Help



Find:

Show: All Packages

Filters...

S	Package	Installed Version	Latest Version	Size	Description
	abcmidi-yaps		20030521-1		Yet another ABC to PostScript converter
	abichack		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

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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