KDE Updates

Give me an Update, Scotty

The K Desktop Environment is the most popular of all Linux desktops. But KDE's sheer bulk means that updates need careful planning. This article shows you how to update your KDE system whilst avoiding the problem of dependencies.

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KDE development is an ongoing process. New versions not only offer security patches, but a multitude of new features. Although you might feel the need for a change, you should be aware of the obstacles that need to be navigated first, like different update approaches for different distributions. Also, check the order in which you install the KDE update packages.

As distributors tend to go their own separate ways with regard to package names, and the location of programs and auxiliary files within the packages, it is almost impossible to provide a generic installation guide. SuSE users will be pleased to hear that we decided to concentrate on their favorite distribution and will be providing instructions in this article.

Back Up Your Data

Your first step should be to back up your data. The backup will mainly comprise your KDE preferences, which are located in the hidden directories *.kde* and possibly *.kde2* below the home directories.

Although the KDE developers promise that most preferences will survive the update, there is no guarantee. If you have important data on your system, your best bet is to back up the complete system. Most distributions provide tools that can handle backups. If something does go drastically wrong, then you can at least restore your backup.

It is normally not necessary to deinstall your KDE system, but you should try to avoid running several KDE versions on a single system. If you insist on doing so, you can try the How-To at [8]. Also make sure that you have enough free disk space – a lack of disk space can lead to cryptic error messages.

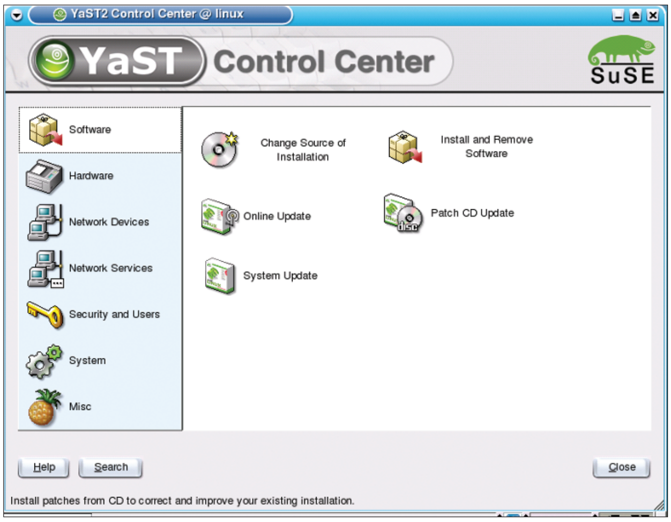
Stop KDE First

You should avoid updating KDE from within KDE. Although some people claim to have done this, it is similar to swapping a chair while someone is sitting on it. Most distributions install multiple desktop systems by default, and allow you to select a desktop when logging on. Alternatively, log off from the KDE environment and press [Ctrl-Alt-F1] to switch to the text-based console to log on there.

You need to be *root* for the following steps; this administrative account is the only one with the privileges required for the update or installation steps.

Automatic

Some distributions provide tools to automate updates. If your distribution offers a tool of this kind, you should use it, rather attempting a do-it-yourself update. For example, SuSE Linux uses YaST. Select *Change source of installation* in the *Software* area, then click on *Add* and *ftp*. Type the name of the server, *ftp.suse.com*, and specify *pub/suse/i386/supplementary/KDE/update_for_8.2/yast-source* as the directory, ensuring that you type your SuSE Linux version number for *8.2*. Now move the new source to the top of the priority list (*Up*). You can then launch the update via *Install and Remove Software* (see Figure 3). Do not forget to revert to your original list order after completing the update.

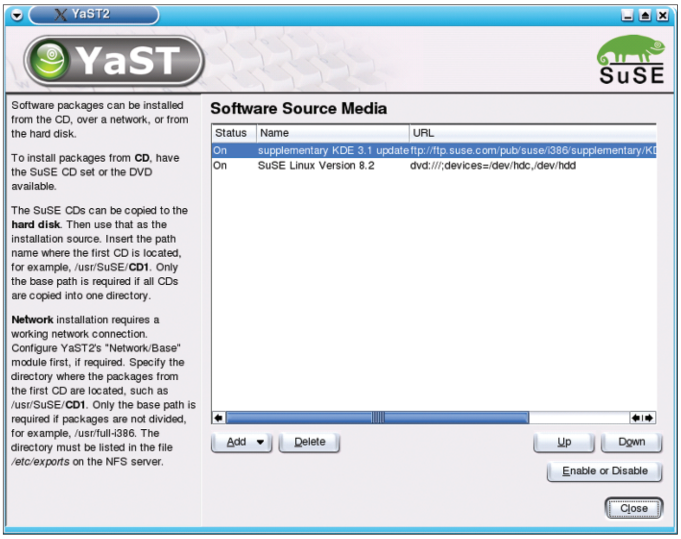


Install patches from CD to correct and improve your existing installation.

Figure 1: The "Software" area in YaST provides the tools you need for a successful KDE update

Individual

If the automatic installation fails, or if your distribution does not provide this kind of facility, you will have to install the packages yourself. Refer to [3] for a list of the packages required by your distribution, sorted by KDE version. If you do not find what you need, try your distributor's Web site. For example, SuSE has a comprehensive and up to date archive at [2].



YaST2

Software packages can be installed from the CD, over a network, or from the hard disk.

To install packages from **CD**, have the SuSE CD set or the DVD available.

The SuSE CDs can be copied to the **hard disk**. Then use that as the installation source. Insert the path name where the first CD is located, for example, /usr/SuSE/**CD1**. Only the base path is required if all CDs are copied into one directory.

Network installation requires a working network connection. Configure YaST2's "Network/Base" module first, if required. Specify the directory where the packages from the first CD are located, such as /usr/SuSE/**CD1**. Only the base path is required if packages are not divided, for example, /usr/full-i386. The directory must be listed in the file */etc/exports* on the NFS server.

Software Source Media

Status	Name	URL
On	supplementary KDE 3.1 update	ftp://ftp.suse.com/pub/suse/i386/supplementary/KD
On	SuSE Linux Version 8.2	dvd:///;devices=/dev/hdc,/dev/hdd

Figure 2: You can use the "Enable or Disable" button in the *Change source of installation* tool, to tell YaST whether or not to use the Internet page you added. The "Status" column shows the current status

Whatever you do, make sure that you resist the temptation to choose packages explicitly designed for other distributions. Even if you succeed in installing the packages, this approach is doomed to failure.

Manufacturers often drop support for older distributions and do not provide update packages. In this case, you should seriously consider moving to a newer distribution, as this is typically a lot easier. But again, if you insist on sticking to your old distribution, you can always compile the sources…

As a minimum, you will need all the packages that start with *qt*, *arts*, *kdelibs*, and *kdebase*. The rest of the names will depend on your distribution. Distributors typically add the version number of the package, and the platform it runs on, to the package (e.g. *kdebase-**3.1.4**-0.9x.1.**i386**.rpm*). *kdebase* contains the basic programs, such as the window and file managers. These applications use libraries from the *kdelibs* and *qt* packages. The latter is a Troll Tech product, and provides the screen display functionality. *arts* is the sound server, which KDE programs use for sound output. The other packages are optional. Box 1 (*Components*) provides an overview. The packages with a *devel* name component are also optional. They contain files that only programmers will need, and can be omitted if you do not need KDE programming support.

The packages must be installed in the following order:

- *qt*,
- *arts*,
- *kdelibs*,
- *kdebase*.

You can install the remaining packages in any other order, although *kaddons* should come last. There are a few exceptions to this rule; distributions that need to update other components, typically libraries whose package names start with *lib*. The Web site at [3] lists them alongside the KDE packages.

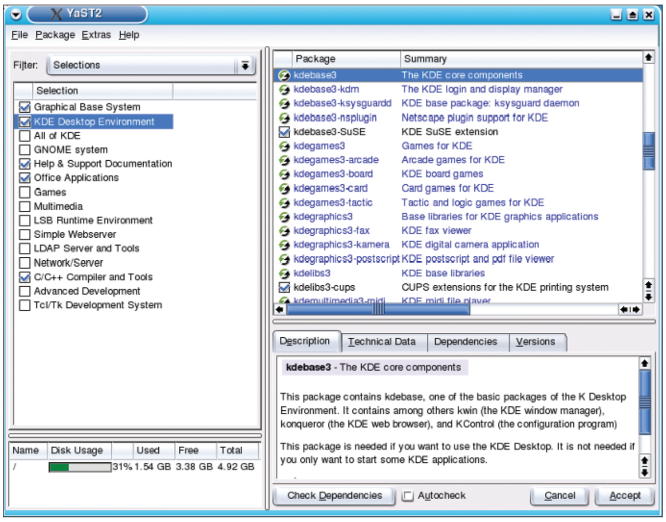
Now that you have these files on your disk, you can start to install them. The procedure depends on the package suffixes, or your distribution's package format: this is RPM for Red Hat, Mandrake, and SuSE, and DEB for Debian.

RPM Packages

If you are working with an alternative GUI desktop, such as GNOME, you can use the package manager this desktop, or your distribution, provides (such as GnoRPM). Alternatively – and this is what we recommend – why not use the command line? If you are working with a GUI, first launch a terminal window. As mentioned, some distributions require you to install a few system packages before you can update KDE. If you have the files, you can issue the following:

```
rpm -Uvh lib*.rpm
```

The next step is the same for all RPM-based distributions. Enter the following



YaST2

Selection
☑ Graphical Base System
☑ KDE Desktop Environment
□ All of KDE
□ GNOME system
☑ Help & Support Documentation
☑ Office Applications
□ Games
□ Multimedia
□ LSB Runtime Environment
□ Simple Webserver
□ LDAP Server and Tools
□ Network/Server
☑ C/C++ Compiler and Tools
□ Advanced Development
□ Tcl/Tk Development System

Name	Disk Usage	Used	Free	Total
/	31%	1.54 GB	3.38 GB	4.92 GB

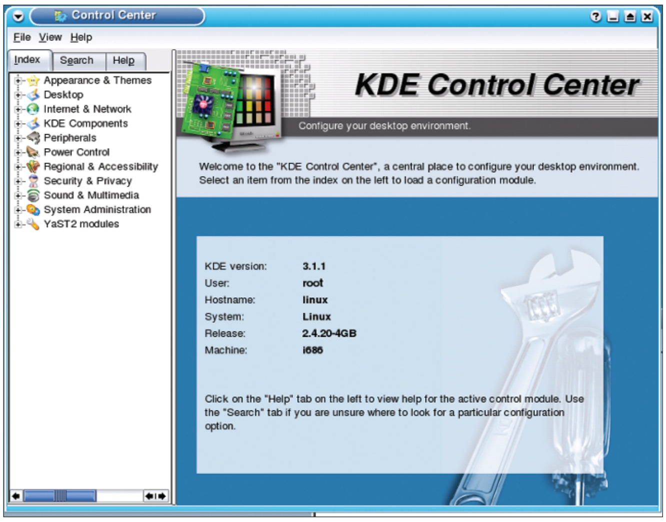
	Package	Summary
♻	kdebase3	The KDE core components
♻	kdebase3-kdm	The KDE login and display manager
♻	kdebase3-ksysguardd	KDE base package: ksysguard daemon
♻	kdebase3-nsplugin	Netscape plugin support for KDE
☑	kdebase3-SuSE	KDE SuSE extension
♻	kdegames3	Games for KDE
♻	kdegames3-arcade	Arcade games for KDE
♻	kdegames3-board	KDE board games
♻	kdegames3-card	Card games for KDE
♻	kdegames3-tactic	Tactic and logic games for KDE
♻	kdegraphics3	Base libraries for KDE graphics applications
♻	kdegraphics3-fax	KDE fax viewer
♻	kdegraphics3-kamera	KDE digital camera application
♻	kdegraphics3-postscript	KDE postscript and pdf file viewer
♻	kdelibs3	KDE base libraries
☑	kdelibs3-cups	CUPS extensions for the KDE printing system
♻	kdemultimedia3-midi	KDE midi file player

kdebase3 - The KDE core components

This package contains kdebase, one of the basic packages of the K Desktop Environment. It contains among others kwin (the KDE window manager), konqueror (the KDE web browser), and KControl (the configuration program)

This package is needed if you want to use the KDE Desktop. It is not needed if you only want to start some KDE applications.

igure 3: The recycle symbol shows which packages will be updated



Control Center

Welcome to the "KDE Control Center", a central place to configure your desktop environment. Select an item from the index on the left to load a configuration module.

KDE version:	**3.1.1**
User:	**root**
Hostname:	**linux**
System:	**Linux**
Release:	**2.4.20-4GB**
Machine:	**i686**

Click on the "Help" tab on the left to view help for the active control module. Use the "Search" tab if you are unsure where to look for a particular configuration option.

Figure 4: The KDE Control Center tells you if you are successful

commands to install the new KDE version:

```
rpm -Uvh qt3-*.rpm
rpm -Uvh arts-*.rpm
rpm -Uvh kdelibs3-*.rpm
rpm -Uvh kdebase3-*.rpm
```

Make sure that you keep to this order. Press the [Enter] key after typing each command line. If the packages are not stored in your home directory, make sure that you add the paths to the filenames.

Now install the remaining packages:

```
rpm -Uvh <packagename>.rpm
```

Replace <packagename> with the filename of the package you want to install. On SuSE Linux, type the *SuSEconfig* command after installing the packages.

Errors

If you notice error messages that ask you to install additional packages, it is important to resolve these dependency issues before continuing. Basic packages not provided by the KDE Project are typically installed using distribution tools (e.g. YaST 2 on SuSE Linux). If you need newer versions of these basic packages than your distribution media provide, the first place to look is your distributor's support or update page. SuSE Linux provides a tool called YOU (YaST Online Update) for this task.

If you cannot locate the packages you need on your distributor's Web site or the KDE download pages [3], try a special search engine, such as *rpmseek.net* or *rpmfind.net*. After procuring all the packages you need, follow the same installation steps as used previously to install the KDE applications: *rpm -Uvh <packagename>.rpm*.

You can add *--force --nodeps* to these commands to suppress dependency and conflict checking – and in some cases this may be necessary – but you should be aware that this switch installs the files on your system, no matter what damage they may cause.

Box 1: Components

The following packages are mandatory:	
arts	Sound server, for sound output
kde-i18n	Language files, for users who require localized versions of KDE
kdebase	The essential basic package with core applications
kdelibs	The basic libraries used by the KDE applications
Optional:	
kdeaddons	Various plug-ins for KDE programs
kdeadmin	System administration tools
kdeartwork	Additional desktop icons, sounds and images
kdebindings	Bindings for various programming languages, like Java or Python
kdeedu	Various learning applications
kdevelop	The KDevelop programming and developer environment
kdegames	Various games
kdegraphics	Graphics programs
kdemultimedia	Multimedia components, like the CD player or mixer
kdenetwork	Network programs, such as KMail
kdepim	Personal Information Management (PIM) applications
kdesdk	This package is required if you intend to develop your own KDE applications
kdetoys	Fairly useless, but fun, toys
kdeutils	Additional tools, such as the calculator and more editors
quanta	HTML editor

Debian Linux

Debian Linux uses *apt-get* to support updates. Unfortunately, this automated procedure can be tricky, as is evidenced by postings to several forums, and my own experience. If you have a preinstalled Knoppix system in particular, there is some danger of losing your existing KDE installation. This is why a complete backup of your data is recommended for Debian, or Debian-based systems.

Add the following line to the *sources.list* file below */etc/apt*:

```
deb http://download.kde.org/➘
stable/3.1.4/Debian stable main
```

Replace the version number, *3.1.4*, with the KDE version you will be installing. Then type

```
apt-get update
```

in a terminal window, or the command line, to update the internal package database. Now enter

```
apt-get install arts kdelibs ➘
kdebase
```

to install the basic KDE system on your machine. You can then add more packages by entering

```
apt-get <packagename>
```

You need an Internet connection for this approach. If you have already installed the files on your machine, or have a CD with the files, replace the Internet

Box 2: Use the Source

Creating a KDE system from the source code is complex, and time-consuming (it can take more than 30 hours). But if you are brave enough to take this approach, you should definitely read the How-To at [5] first. It details the steps needed to compile the sources.

First of all, ensure that any dependencies are resolved. You will find a list of packages for compilation at [6]. Note that some distributions sub-divide these packages. For example, SuSE Linux needs to have the *zlib*, and the *zlib-devel* packages installed; they are not installed by default.

Also make sure that all the source code packages you use belong to the same KDE version. A mixed up bunch of packages could quite easily mix up your system

Unpack the archive after downloading, as follows:

```
tar jxvf <packagename>.tar.bz2
```

Use *cd <packagename>* to the subdirectory with the package. Again, keep to the order already referred to earlier in this article.

```
./configure
```

will configure the package, and prepare it for compilation. At the same time, this step discovers missing files or packages. By default, KDE is installed in */usr/local/kde/*. To use a different directory, call *configure* with the *--prefix* option. Some packages offer special configuration options, which you can view by typing *./configure --help*.

Assuming that this step proceeded without any errors, you can now start compiling by typing:

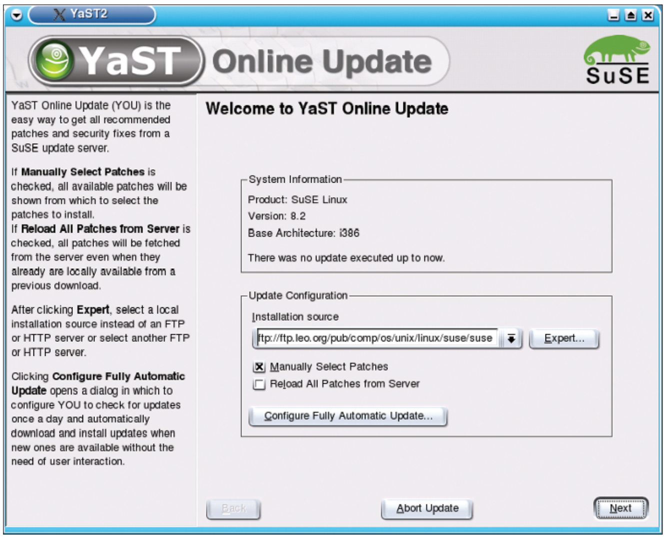
```
make
```

and then

```
make install
```

to install the package on your system.

The Konstruct tool can be a big help in some cases, as it collates the required compilation steps [4].



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 **Expert**, select a local installation source instead of an FTP or HTTP server or select another FTP or HTTP 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.

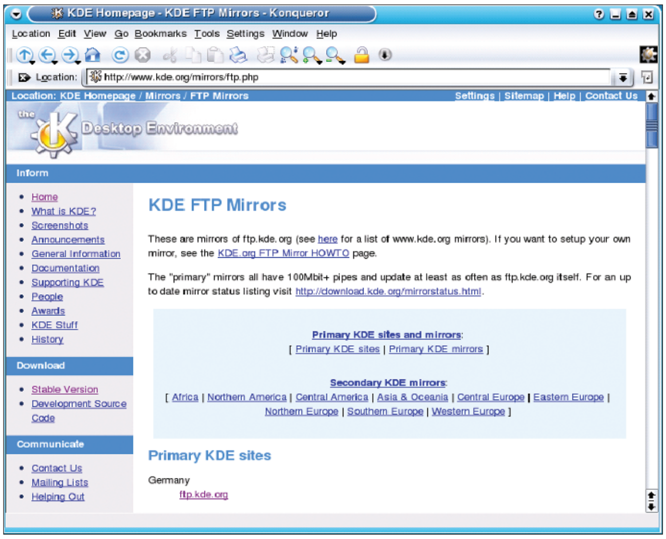
Welcome to YaST Online Update

System Information
Product: SuSE Linux
Version: 8.2
Base Architecture: i386

There was no update executed up to now.

Update Configuration
Installation source
ftp://ftp.leo.org/pub/comp/os/unix/linux/suse/suse
☒ Manually Select Patches
☐ Reload All Patches from Server

Figure 5: The YOU tool updates your SuSE Linux system simply and quickly – but it cannot handle a KDE update



Location: http://www.kde.org/mirrors/ftp.php

Location: KDE Homepage / Mirrors / FTP Mirrors

KDE FTP Mirrors

These are mirrors of ftp.kde.org (see here for a list of www.kde.org mirrors). If you want to setup your own mirror, see the KDE.org FTP Mirror HOWTO page.

The "primary" mirrors all have 100Mbit+ pipes and update at least as often as ftp.kde.org itself. For an up to date mirror status listing visit http://download.kde.org/mirrorstatus.html.

Primary KDE sites and mirrors:
[Primary KDE sites | Primary KDE mirrors]

Secondary KDE mirrors:
[Africa | Northern America | Central America | Asia & Oceania | Central Europe | Eastern Europe | Northern Europe | Southern Europe | Western Europe]

Primary KDE sites

Germany
ftp.kde.org

Figure 6: When all else fails, you can always resort to using the zipped tarballs to update your KDE system

address in the *sources.list* entry with the absolute pathname. Don't forget to add the *file:* prefix.

If you run into trouble, you should first try removing the installed KDE system. Type:

```
apt-get --purge remove ➘
kdelibs4 libarts1
```

to do so. If this does not help, try installing the packages directly, using *dpkg*:

```
dpkg -i <packagename>.deb
```

Again, make sure that you keep to the package order mentioned previously. Otherwise you run the risk of dependency problems.

Tar Archives

You should only resort to the zipped tarball format (suffix: *.tar.gz*) if your distribution does not provide any convenient packages. As you will be unable to perform version and dependency checking, you will need to ensure that the correct versions of the libraries and programs that KDE needs are installed. And you will need to perform some manual configuration steps to complete the update (see Box 3, *Environment Variables*).

When downloading the update files, make sure that you select the binary packages – they are identifiable by the *bin* string in the filename. The source code is available in the same format, and is identifiable by the *src* string (see Box 2, *Use the Source*).

First change to the root directory (*cd /* on the console), and unzip the packages one after another by typing:

```
tar xvfz <packagename>
```

Again, replace <packagename> with the name of the file you are unzipping, and do not forget to add the path to the package. This step should place KDE in the */opt/kde3* directory.

More Help

If you run into trouble, there are a whole bunch of sites that you can look to for help. One of them is the KDE homepage, which provides innumerable installation tips in the documentation section. There is a mailing list and a forum [7]. ■

Box 3: Environment Variables

KDE needs a few environment variables to be able to locate its components. Although you can typically ignore these variables when installing packages, it makes sense to know about them, just in case.

The most important thing is to add the KDE program directory *bin* (as in */opt/kde3/bin*) to the existing PATH variable. Also, KDEDIR must point to the KDE installation directory (this is */opt/kde3* in our example). In rare cases, KDE may fail to locate its libraries. Add the KDE library directory *lib* to the LD_LIBRARY_PATH variable in this case (this is */opt/kde3/lib* in our example). Where and how these variables are defined, will vary depending on your distribution.

The window manager is launched by a script called *startkde* – this assumes a working X Window system. It is preferable to use your distribution's configuration program, if you intend to launch KDE on booting your machine. However, if you cannot change the window manager or desktop, you should open the *.xinitrc* file in your home directory, and replace the commands in this directory with the commands in *startkde*. Any lines that refer to launching the window manager will typically need replacing. Repeat this for the *.xsession* file. If one of these files is missing, use an editor to create it, and type *startkde* in the first line. Some systems, including Red Hat Linux, use the *.Xclients* file.

INFO

[1] KDE Project: *http://www.kde.org*

[2] Updates for SuSE Linux: *http://www.suse.de/uk/private/download/linuks/index.html*

[3] Download the current KDE version: *ftp://ftp.kde.org/pub/kde/stable/*

[4] Konstruct: *http://developer.kde.org/build/konstruct//index.html*

[5] Information on compiling: *http://developer.kde.org/build/compile_kde3_1.html*

[6] Pre-requisites for compiling: *http://www.kde.org/info/requirements/3.1.php*

[7] KDE Forum: *http://kde-forum.org/*

[8] Two KDE versions on one machine: *http://developer.kde.org/build/build2ver.html*