

## How To: Create KDE Themes, Part 1

# GIVING KDE A MAKEOVER

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**KDE gives you the ability to customise its appearance very quickly using what are known as Themes. In this series we will show you how you can create your own themes.**

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**Theme:** *A Theme is a collection of multimedia elements which have a common theme as regards content. For example, if you are the fan of a rock group, you could use a digitised photo of the band as a background image and extracts from their songs as system sounds, creating a Theme.*

**Desktop Environment:** *Linux has several graphical desktop environments. The best known are CDE, KDE and GNOME. In contrast to window managers, with which desktop environments are often confused, they usually provide additional functions such as Drag & Drop, Session Management and a panel bar.*

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Along with GNOME, the **K Desktop Environment** (KDE for short) has now established itself one of the standard graphical interfaces for Linux. In this series we will take a look at how you can change the appearance of the desktop and applications under KDE using **Themes**. We will take you through the process step by step using the "eclipse" theme as an example so that you can see what options you have as a creative user to tailor KDE to your own requirements. We will also describe some useful tools which make it easier for you to create your own themes. We don't promise to mention all the programs that could be used, nor can we guarantee to cover all the possible settings. However, the knowledge provided in these articles will provide a base from which you can go on to develop your own ideas. You will find more detailed literature on the KDE Themes Homepage.

Note that this article relates to the most recent stable version of KDE – 1.1.2. At present, we cannot tell to what extent themes developed for this KDE version will be compatible with those of KDE 2. The only way to find out, when KDE 2 arrives, is to try it!

Most of the tools you will need are contained in the most common Linux distributions as standard (for this article we used SuSE 6.4). If you find that in your case this is not so, you can download the source code from the Internet at the addresses shown and then

compile it yourself. This will work regardless of the distribution you use. (See the box *Installing Tools* or the article on software installation in Linux Magazine, October 2000 for more information).

### What can we change?

The features provided by KDE can be divided into the following groups:

- Start panel
- Background image
- Icons
- Window keys
- Window title panel
- Window frame
- System sounds
- Colour diagram
- KFM settings

In this first article of the series we will be looking at what we can do with the start panel, the background image and the desktop icons. We will look at the other items in the following two articles.

### And we're away

First of all, create a sub-directory into which you can collect all the files belonging to your theme. We will do this using the command `mkdir eclipse`.

Change to this sub-directory (`cd eclipse`). The next step is to create the central configuration file for the theme (called `THEMENAME.themerc`) using any text editor of your choice. For example, you could type `kwriteln eclipse.themerc`. When you have finished, the configuration file should consist of several sections. To start, there will be a `[General]` section where, as the section name suggests, we save general information (see Listing 1, lines 001 to 006). This section contains the information listed in table 1.

If you look at the example (Listing 1) you will soon see that not all these details have to be present. In the example, the homepage entry is missing.

## Colourful panel, or start panel with a theme

Most users like to apply a graduated fill to the start panel. However, in principle, it is possible to use a graphics file too. It's really a matter of taste. In our example we use just a graduated fill. A good tool for creating attractive graduated fills is the image processing program *The Gimp*. The best way to proceed is as follows:

- Start "The Gimp" (`gimp`)
- Create a new file (`[CTRL]+N` or via the relevant menu)
- Width = 1 pixel, height = 60 pixel (this is actually larger than necessary, but don't worry about it)
- Set colours 1 and 2 (See figure 1)
  1. To set the colours, double-click on the relevant colour to view the colour selection dialog (see Figure 2). To keep consistent with our example, define colour number 1 using a hexadecimal value `#b0a48e` and colour 2 using `#696154`.

### Installing Tools

#### Decompressing zipped archives

- If filename ends in `.tar.gz`, unzip using `gunzip FILENAME`
- If filename ends in `.tar.bz2`, unzip using `bunzip2 FILENAME`

This creates a file with a name ending in `.tar`

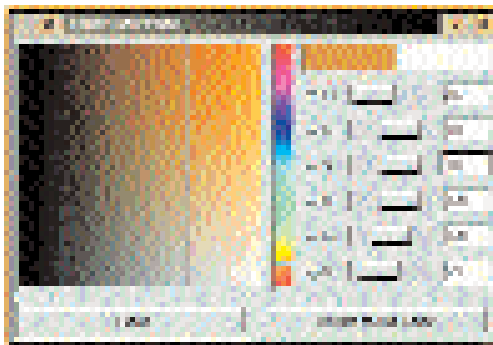
- Unzip the archive (`tar xvf FILENAME`)
- Switch to the newly created directory (`cd DIRECTORYNAME`)
- Configure the compilation process (`.configure`)
- Start the compilation process (`make`)
- Install the compiled program (`make install`) This last step requires root privileges (type the command `su` followed by the password.) Alternatively, you can start the program in the relevant sub-directory using `./PROGRAMNAME`.

Table 1: Header of a theme configuration file

|                        |                         |
|------------------------|-------------------------|
| Section name           | [General]               |
| Theme name             | name=Themenname         |
| Theme's author         | author=Authorname       |
| Author's email address | email=eMailaddress      |
| Theme's homepage       | homepage=Homepage       |
| Theme description      | description=description |
| Theme version          | version=Versionnumber   |

Table 2: Start panel

|                                |                     |
|--------------------------------|---------------------|
| Section name                   | [Panel]             |
| Start panel's background image | background=Filename |



- Enlarging our image:
  1. Select the enlargement tool by left-clicking on the relevant icon (see Figure 1)
  2. Left-click on our new image until it is large enough
- Using the graduated fill tool
  1. Select the graduated fill tool by left-clicking on the relevant icon (see Figure 1)
  2. Left-click on the top corner of our new image
  3. Press the mouse button and move the mouse down
  4. Release the mouse button
- Saving the file
  1. Right-click on our image
  2. File/Save as
  3. Enter file name `panel.xpm`
  4. Click on OK

As we are still in the `eclipse` directory, the file `panel.xpm` should appear in it too. If it doesn't, you will have to find the file and copy it to the directory. Now update the relevant section (see lines 011 and 012 in Listing 1) in the configuration file and the new start panel is ready. For convenience, this section can be found in table 2 again.

Figures 3 and 4 show the wondrous change to the start panel when it is included in the theme. Actually, we have cheated a bit here. We have not yet defined any new icons. We will see how to do that shortly.



[right]  
Figure 1: The Gimp:  
Foreground and  
background colour

[left]  
Figure 2: The Gimp:  
Colour selection dialog

[top] Figure 3: Start panel  
with standard KDE look

[below] Figure 4:  
Start panel with theme

## Background image

There are many different ways of creating a digital image (**Scan**, **Render**, draw etc.) that how you create the background image for your theme is up to you. We will concentrate on what you need to do to make it suitable for use as a background image. What you must do depends on whether the background consists of a single large image, a colour, a graduated fill or **tilled** small **images**.

File *wood1.jpg* (Figure 5) is an example of a tiled image. It comes as standard with KDE 1.1.2. The result can be seen in Figure 6.

Our example theme uses a single background graphic which is stretched to fit the size of the screen. So that this works without distorting the proportions of the picture, background images must be of a size that is a multiple of the screen resolution. The following dimensions are recommended:

- 640 x 480
- 800 x 600
- 1024 x 768
- 1152 x 864
- etc.

The parameters given in Table 3 are available in the theme configuration file so that the background image can be manipulated. (See lines 007-010 in Listing 1). The following modes may be used to determine how the background image is displayed:

- *Tiled* (Figure 7) – The background image is shown tiled, starting in the top left-hand corner.
- *Mirrored* (Figure 8) – The background image is placed in the top left-hand corner of the screen. If the screen is not filled, the image is mirrored along its edges.
- *CenterTiled* (Figure 9) – The background image is shown tiled, starting from the centre of the screen.
- *Centred* (Figure 10) – The background image is shown in the centre of the screen.
- *CentredBrick* (Figure 11) – The background image is shown in the centre of the screen in front of a "brick wall".
- *CentredWarp* (Figure 12) – The background image is shown in the centre of the screen and perspective lines are drawn in.
- *CentredMaxpect* (Figure 13) – The background

Figure 5: wood1.jpg [below]  
Figure 6: wood1.jpg [right] tiled

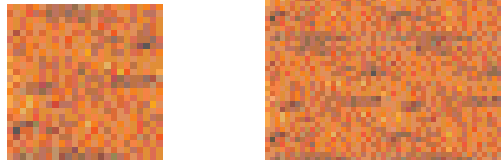


Table 3: Background

| Section name   | [Display]                         |
|--|-----------------------------------|
| Should the background be the same for all virtual desktops?    | <i>CommonDesktop=true / false</i> |
| Background image of the first virtual desktop                  | <i>Wallpaper0=Filename</i>        |
| Display method of the first virtual desktop's background image | <i>WallpaperMode0=Mode</i>        |

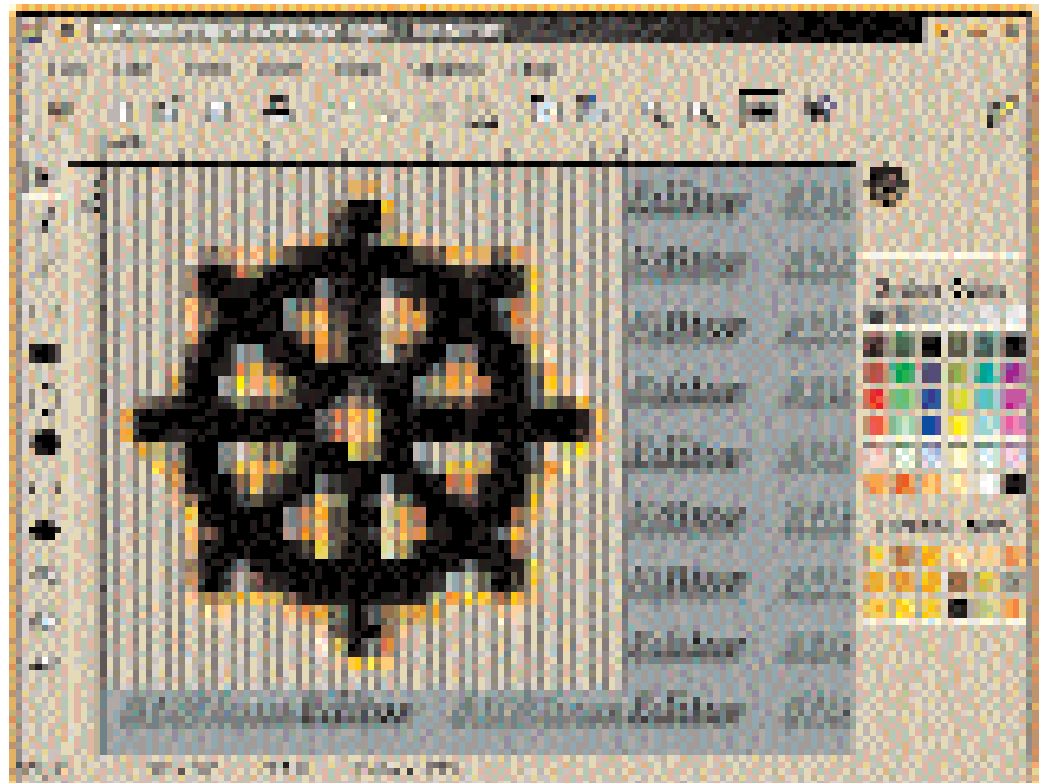


Figure 21: kiconedit



Figure 7: Background image tiled



Figure 8: Background image mirrored

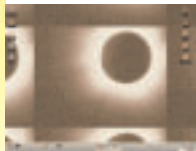


Figure 9: Background image centre-tiled



Figure 10: Background image centred



Figure 11: Background image centred in front of wall

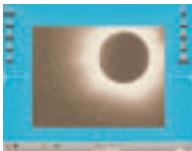


Figure 12: Background image centred with perspective



Figure 13: Background image centred and scaled symmetrically



Figure 14: Background image tiled



Figure 15: Background image tiled



Figure 16: Background image adjusted to screen



Figure 17: Background image top right-hand corner



Figure 18: Background image top left-hand corner



Figure 19: Background image bottom right-hand corner



Figure 20: Background image bottom left-hand corner

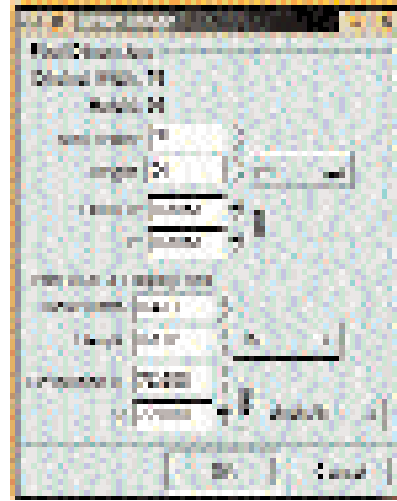
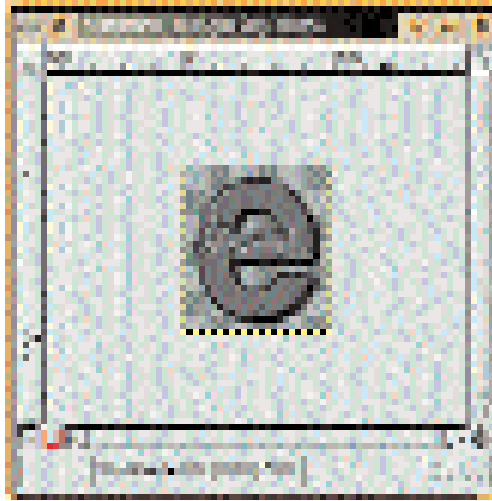
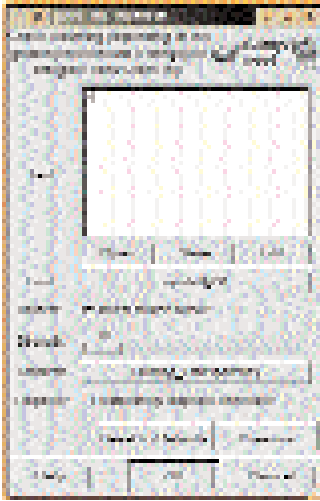


image is shown adjusted to the size of the screen, starting from the centre of the screen. The height and width are changed in equal proportions. Consequently, the background image may not cover the entire screen.

- *SymmetricalTiled* (Figure 14) – The background image is tiled symmetrically in the centre of the screen.
- *SymmetricalMirrored* (Figure 15) – The background image is mirrored symmetrically in the centre of the screen.
- *Scaled* (Figure 16) – The background image is adjusted to the size of the screen.
- *TopRight* (Figure 17) – The background image is displayed in the top right-hand corner of the screen.
- *TopLeft* (Figure 18) – The background image is displayed in the top left-hand corner of the screen.
- *BottomRight* (Figure 19) – The background image is displayed in the bottom right-hand corner of the screen.
- *BottomLeft* (Figure 20) – The background image is shown in the bottom left-hand corner of the screen.

Instead of having a common background for all virtual desktops, you can have a different background image for each individual desktop. You can do this by entering `CommonDesktop=false`. You can then specify the individual images and modes using `Wallpaperx=Filename or WallpaperModex=Mode`. `x` is the number of the relevant desktop, starting from the zero. If you don't specify a background graphic, the background colour or background colour fill defined in the colour dialog box is used. We will see how to do this later on.

## Many, many colourful icons

Just as there a number of ways of creating background images, so there are also a number of ways of creating icons. The most obvious involves the use of an icon editor. A good choice would be *kiconedit* (see figure 21).

As it can be a lot of trouble to edit icon pixels, an alternative approach is to use "The Gimp" and its script capabilities. For our example theme we used the *Fire logo script* (see figure 22). The procedure is as follows:

- Start "The Gimp" (*gimp*)
- Start the *Fire logo script* via `Xtns/Script/Logos/Fire logo`. (If your copy of *gimp* doesn't have this script installed you can, of course, try a different one.)
- Choose an attractive font and some relevant text (the example uses Helvetica/34/bold and an "e" to stand for "eclipse")
- Press OK
- The burning "e" shown in Figure 23 is created
- Enlarge the view for a better overview, using the same method used when creating a graduated fill for the start panel
- Merge the visible levels using the key combination `[CTRL+M]`
- Enclose the burning "e" using the selection tool (sketched rectangle in Gimp main window)
- Copy the area using the key combination `[CTRL+C]`
- Create a new graphic using the key combination `[CTRL+N]` (The size is automatically set to that of the copied image.) *Important: Set the "transparent background" option in the "New Image" dialog box.*
- Add the burning "e" to the new graphic using the key combination `[CTRL+V]`
- Right-click the new graphic and use *Image / Scale* to increase it to 34 x 34 pixels. You must ensure that the "Constrain Ratio", as shown in Figure 24, is not selected, otherwise it is only possible to make symmetrical size changes.
- Save new picture as *e.xpm*

[left]  
Figure 22: The Gimp fire logo script

[middle]  
Figure 23: The burning "e"

[right]  
Figure 24: Scaling with The Gimp

**Scan:** This is the process of transferring photos or images on paper to a digital image file using a scanner connected to the computer.

**Render:** This is the process of creating a realistic image from a model designed using a drawing program.

**Tiled images:** For tiled backgrounds we make the most of the symmetrical characteristics of images. This ensures that the images merge seamlessly at the borders when one is placed next to another.

Table 4: Icons

|   |                                 |
|---|---------------------------------|
| Section name                              | <code>[[icons]</code>           |
| The K on the start panel                  | <code>PanelGo=Filename</code>   |
| Exit key on the start panel               | <code>PanelExit=Filename</code> |
| Key to lock the screen on the start panel | <code>PanelKey=Filename</code>  |
| Home directory                            | <code>Home=Filename</code>      |
| Trash can                                 | <code>Trash=Filename</code>     |
| Full trash can                            | <code>TrashFull=Filename</code> |



**Info**

KDE Homepage:  
<http://www.kde.org>

Example of a theme "eclipse":  
<http://kde.themes.org/themes.phtml?cattpe=inc=trad=0=1=eclipse>

KDE Themes Homepage:  
<http://kde.themes.org>

The Gimp Homepage:  
<http://www.gimp.org>

kiconedit:  
<http://w1.1358.telia.com/~u135800018/prog.html#KICONEDIT>

KDE Theme manager:  
<ftp://ftp.kde.org/pub/kde/unable/apps/themes/kthememanager-1.0.0-src.tar.gz>



Figure 25: The KDE theme manager

We now have our first icon. Obviously, we cannot describe how to create all of the icons contained in "eclipse" – there are just too many.

Three weeks later... Thousands of icons have been drawn or "gimped" and they must now be entered in our configuration file. The sections provided for this are *[Icons]* (see lines 013 to 019 in Listing 1) and *[Extra Icons]* (see lines 020 to 040 in Listing 1). The parameters of the first section can be found in table 4.

The section *[Extra Icons]* is, as Listing 1 suggests, a list of various icons. The icon names are identical to those of the icons which are to be replaced. The original icons can be found in the KDE directory (for SuSE 6.4 they are under */opt/kde/share/icons*).

## That's that

We are now coming to the end of this first part of our trilogy. What remains to be done so that you can admire the results of your work so far? There are two ways of changing the various system parameters so that your theme can be used. Firstly, you can make all the changes manually. However, this means:

- Editing various configuration files
- Copying various graphics and sound files
- Adjusting a range of colours manually

During the development phase, when you may want to try out different variations, these steps are annoying. The second, easier approach is to use the KDE theme manager *kthememgr* (see Figure 25).

This copies the necessary files and automatically undertakes the editing required. To use it you must zip the relevant files including the configuration file *THEME\_NAME.themerc* into a **tar-archive** created using *gzip*. To do this, proceed as follows:

- Switch to the directory where the *eclipse* theme has been created
- Archive the entire directory in a file (*tar cvf eclipse.tar eclipse/*)

- Zip the archive (*gzip eclipse.tar*)

Now you can start the KDE theme manager using the console or the program starter (*[ALT]+[F2]*) using the command *kthememgr*. Of course, the start menu can be used too. Figure 25 shows this program's main menu. Using *Add...*, import our theme, which will then appear in the list. With a brave *OK* we now transfer our one-third completed theme.

## Removing themes

Unfortunately, *kthememgr* doesn't delete themes cleanly. The individual images must be deleted by hand before the theme is changed. You can do this using three commands: *rm ~/.kde/share/icons/\* -rf*  
*rm ~/.kde/share/apps/kwm/pics/\* -rf*  
*rm ~/.kde/share/apps/kpanel/pics/\* -rf*. Don't worry, the theme manager keeps a copy of the files so that they are available if the theme is used again. ■

### Listing 1: eclipse.themerc

```
001 [General]
002 name=eclipse
003 author=Hagen Hoepfner
004 email=Hagen.Hoepfner<\@>gmx.de
005 description=A dark sun for KDE (made using
gimp and its Firetext-plugin)
006 version=0.3

007 [Display]
008 CommonDesktop=true
009 Wallpaper0=bg.jpg
010 WallpaperMode0=Scaled

011 [Panel]
012 background=panel.xpm

013 [Icons]
014 PanelGo=go.xpm:mini-go.xpm
015 PanelExit=exit.xpm
016 PanelKey=key.xpm
017 Home=kfm_home.xpm
018 Trash=kfm_trash.xpm
019 TrashFull=kfm_fulltrash.xpm

020 [Extra Icons]
021 Extra1=kfind.xpm
022 Extra2=image.xpm
023 Extra3=sound.xpm
024 Extra4=aktion.xpm
025 Extra5=kwrite.xpm
026 Extra6=folder.xpm
027 Extra7=kcontrol.xpm
028 Extra8=kdehelp.xpm
029 Extra9=kmail.xpm
030 Extra10=kfm_refresh.xpm
031 Extra11=folder_open.xpm
032 Extra12=3floppy_mount.xpm
033 Extra13=3floppy_unmount.xpm
034 Extra14=5floppy_mount.xpm
035 Extra15=5floppy_unmount.xpm
036 Extra16=core.xpm
037 Extra17=document.xpm
038 Extra18=input_devices_settings.xpm
039 Extra19=kab.xpm
040 Extra20=kvtt.xpm
```

**tar-archive:** Although the *tar* program was originally designed to back up data to a tape drive, it can also be used to merge several files into one single archive file. However, the data is not compressed during this process. *Tar* archives are usually zipped using *gzip* or *b2zip* in order to save space

