

# OUT OF THE BOX GOOD SOUND WITHOUT X

Have you still got an old computer with 16Mb RAM and a Pentium 100 processor standing in the corner? Christian Perle explains how you can turn it into a lean MP3 player with the help of a Linux-compatible soundcard and mp3blaster

No matter how great XMMS may be it is nevertheless encumbered by a weight of library dependencies. In addition to the Xwindow system, a whole lot of additional files need to be installed. For Bram Avontuur's mp3blaster, on the other hand, all you need is the **text console**, which provides an extremely clear display.

## Score

Anyone wanting to compile mp3blaster themselves will have to get the source text in the form of a compressed **tar** archive from <http://www.stack.nl/~brama/mp3blaster/>. You should also have installed the GNU C++ compiler **g++**, the **ncurses** library and the necessary **header files**.

Thanks to the **configure script** there is not much to do when compiling the mp3blaster sources:

```
tar xzf mp3blaster-3.0.tar.gz
cd mp3blaster-3.0
./configure
make
su (enter root password)
make install-strip
exit
```

## Conductor

If everything has worked, the executable program is now in the */usr/local/bin* directory; in the *make install-*

## Out of the box

There are thousands of tools and utilities for Linux. "Out of the box" takes the pick of the bunch and each month suggests a little program, which we feel is either absolutely indispensable or unduly ignored.

*strip* further files end up in the */usr/local/share/mp3blaster* directory. From there you can copy the sample configuration *sample.mp3blasterrc\_for\_x* with the command:

```
cp /usr/local/share/mp3blaster/sample. mp3blasterrc_for_x ~/.mp3blasterrc
```

into your home directory. The program can be adapted via this file, which is something we will make use of later. The difference between the sample configurations *sample.mp3blasterrc* and *sample.mp3blasterrc\_for\_x* lies in the fact that the latter largely does without the use of function keys, which unfortunately work only in the text console, but not in an X terminal.

Now enter *mp3blaster* as a shell command. Your new console MP3 player first reports for duty with the playlist editor. With [ 1 ] *Select Files* you can

**Text console** Parallel to the graphical user interface (X), there are usually several consoles running on a Linux system in text mode. You can get to these from an active X with Ctrl+Alt+F1 to F6. You can get back to X in most distributions with Alt+F7.

**tar** The "tape archiver", the standard archiving program under Unix. With this program, whole directory structures are merged into a single file, which can be written or compressed e.g. on a magnetic tape (hence the name).

**ncurses** A library for terminal-dependent output of text and control sequences for cursor positioning, colour changing etc. It replaces the older Termcap library.

**Header files** In header or include-files, there are lists of the functions available in a library together with parameters. The C(++) compiler needs this information for compiling a program. In the most common distributions a header package for a library usually includes the addition of "dev" or "devel" in its name.

**Configure script** Used for the automatic evaluation of properties of the system, on which a source text is to be compiled. So for example configure finds out on its own which C(++) compiler is installed. With the aid of this tool it is possible to compile platform-overlapping software on different (usually Unix) systems, without having to make changes by hand.

change to file selection mode and also back again to the playlist.

Both of these modes provide access to all the controls of the player. In playlist mode you control the playing (keys [p], [s], [4] and [6]) and order ([empty], [M] and [m]) of the playlist, while the file selection mode actually allows you to put together a playlist.

Regardless of the mode, the display splits vertically into four areas. From top to bottom, these are an aid to the key functions, information on the play mode (playlist) or on sorting (file selection), details on the current group (this term refers to a collection of several songs) in playlist mode or of the “working directory” (file selection), plus whichever MP3 file is currently running. The column split into three on the right-hand side consists of details on the type of MP3 file and the play mode for the current group and a small mixer.

### Tutti

mp3blaster also differs from some other MP3 players by dividing the playlist into groups. The simplest method of creating a new playlist is via the selection item [ 5 ] *Add Dirs As Groups*. In this way the program creates a separate group for each subdirectory of the current file view.

But what’s the point of this grouping? In the first place, you can make pre-selection for playing back in a random sequence (Shuffle). With [ 8 ] *Toggle Play Mode* mp3blaster enables you to change the global playing action (Shuffle all songs in all groups, play a group with subgroups, repeat a group without subgroups).

### Frutti

In playlist mode, using [ 2 ] *Add Group* you can also add new, blank groups and then fill these in the file selection mode. The name of each group can be changed at any time with [ 5 ] *Set Group Title*, even while MP3 files are being played. Adding songs to the group is also possible during playback. If you have created a playlist to your satisfaction, save it with [ w ] *Write Playlist*. The corresponding file will automatically respond to the file ending *.lst*. At the same time the *Play Mode* set will be saved with it.

As the mp3blaster **manpage** reveals, the program includes various function toggles, which can be specified as options when you start the program. The flag *-a* (autolist) is very useful for playing back stored playlists. The argument file behind this is a playlist, whose pieces the player will play back without pausing. So the command

```
mp3blaster -a all.lst
```

automatically plays back the list *all.lst*, without you having to press [ 9 ] *Start/Stop Playlist*.

```
chris@cell:/home/chris > mp3tag /akku/bahnhof/dreadful_shadows/paradize.mp3
/akku/bahnhof/dreadful_shadows/paradize.mp3

Artist      Dreadful Shadows
Songname    Paradise
Album       Homeless          Year: 1995
Et cetera
Genre       Gothic Rock
Info        Mp3g-1 layer 3 at 44100Hz, 128kb/s (JointStereo)

chris@cell:/home/chris > |
```

### MP3 tags under control

### Tuning fork

You can make individual adjustments to the appearance and behaviour of mp3blaster via the file *.mp3blasterrc* in your **home directory**. Here, again, a look at the manpage will be helpful. If you specify:

```
File.ID3Names = yes
```

in file selection mode the program will additionally show the **ID3 tags** of the songs, when you change the display with [ f ] *Toggle File Display*. For setting and viewing these tags, by the way, mp3blaster comes with the independent program mp3tag.

### Music on boot

So, you want the boot procedure of your computer to be accompanied by music? Adventurers have the option of starting mp3blaster directly when the Linux system fires up. To do this we use the file */etc/inittab*, which contains the basic configuration of **init**.

Since the first seven text consoles in the most common distributions are taken up by login prompts and Xserver, for your MP3 player you should use the eighth console */dev/tty8*. To do this, enter the line:

```
M8:2345:respawn:/usr/local/bin/mp3blaster
</dev/tty8 >/dev/tty8
```

as root in the */etc/inittab*. This ensures the player starts during boot-up and after stopping with *q* is immediately started up afresh. There is still one cosmetic blemish to spoil things: the program is started – worrying in security terms – with root rights. A rapid remedy for this is to set the **SUID** bit and transfer the file */usr/local/bin/mp3blaster* to the user “nobody”:

```
chown nobody.nogroup /usr/local/bin/mp3blaster
chmod 6755 /usr/local/bin/mp3blaster
```

Now mp3blaster is executed with the rights of the (unprivileged) user nobody, which should prevent any unauthorised writing in system directories.

**Manpage** Like all Unix systems, Linux has a sort of online reference manual for the installed programs. This aid is invoked by *man program name*, e.g. *man mp3blaster*.

**Home directory** The personal home directory of a user. This is where the user arrives after a successful log-in or with the command *cd* (without additional parameters).

**ID3 tag** A small data suffix for MP3 files, in which additional information such as year of release, musical genre etc. can be stored. Many MP3 players evaluate this information and can display it.

**init** This program is the first to be started by the kernel when booting up and takes over the rest of the initialisation procedure.

**SUID:** The “Set User ID” bit. If this is set in the rights of an executable file, in principle it will be executed with the access rights of its owner. On security grounds, the SUID bit has no effect in shell scripts.