

OUT OF THE BOX GET THE BALL ROLLING



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.

Even though the Christmas baubles have been packed away for another year, it doesn't mean you can't have fun playing with shiny balls. Christian Perle takes a look at Kugel by Vlatko Primorac – a perfect game for cold winter evenings

Can you remember Solitaire? No, I don't mean the addictive game that all secretarial staff play to pass the time until the next Windows crash, but the Solitaire played with marbles, which are removed by jumping over them. If you now add Tetris to this and mix well, then you'll have something like the game plan of Kugel (which means Sphere).

The point of this game is to remove spheres from the playing field for as long as possible, which is done by forming rows of the same colour. To do this, you move the spheres that are already on the playing field to other positions, which must be reachable without passing barriers. Each row removed increases your score. However the program does make things a little trickier by randomly placing spheres in the empty fields, effectively blocking off your options. When the playing field ends up full, the game ends.

Interpreted

Since Kugel is written in the script language Perl, you don't have anything to **compile** on installation; the Perl **Interpreter** handles all this for you. The graphic display is taken care of by Tk, which although originally conceived as an expansion of the script language Tcl, can now also be used with both Perl and Python. To integrate Tk into Perl you may need to install the packet perl-tk, which comes with all modern distributions.

As such, the installation procedure is limited to copying a few files. At the URL <http://www.ibiblio.org/pub/Linux/games/strategy/kugel-2.4.tar.gz> you will find the **tarball** necessary for installation. Copy the file kugel-2.4.tar.gz together with the script into a common directory. Give yourself root rights with the command *su*, and start it with *sh kugelinst.sh*. So as to give back the superuser identity afterwards finish with *exit*.

Rules and tactics

After installation call up the program from a terminal window with *Kugel &*. The playing field should look like Figure 1, but with fewer spheres. Now you must move spheres in such a way that rows of five or more spheres of the same colour are created – horizontally, vertically or diagonally. Spheres can be moved by clicking on one and then clicking upon the target field where you want to move it to. An unblocked route must exist between the source and destination fields in order for the sphere to travel between them.

Figure 2 shows two different moves, represented by arrows. Only when the first removes the brown row of spheres from the board is there a clear run for



Figure 1: The Kugel playing field



Figure 2: A question of strategy

the pale green sphere, which in move 2 completes a row. The removal of a row increases your score based upon the number of spheres removed (removing five spheres gives you five points).

For each turn where a row is not removed from the board, the game adds three new spheres (seen in the preview to the left of the main playing field) at random into previously empty fields. This gradually restricts the player's freedom of movement. Nevertheless, when playing Kugel you should not concentrate too hard on any individual row of spheres. It's better to pursue several "building sites" at the same time. This increases the chances of completing a row.

Adaptable

If the Kugel window is swallowing up too much space on your desktop, you should look at the items in the View menu. A lot of the game's features can be minimised from here. In the Colors menu you can choose between various background colours. The Options menu enables you to adjust the size of the playing field and values such as the minimum length of a row or the number of "penalty" spheres. With



Figure 3: Spheres also need a change of wallpaper

Compiling A program is not executable by the operating system in source text form. It is only by compiling ("translating") it with a compiler that it turns into a form that can be executed by the respective processor.

Interpreter Contrary to the compiler-based programming languages, in this case the source text is read anew and directly executed every time the program is started. This may be slower than compiled code, but during development there is no need for the compiler run.

Tarball tar is an ordinary archiving tool under Unix. A collection of files packed together by this, referred to in slang as a tarball, usually bears the file ending .tar.gz or .tgz. This is because such archives are firstly assembled with tar and then compressed with the program gzip.

& The ampersand, entered as the last character in the command line, serves to execute a command in the background. Otherwise the shell remains blocked until the command is completed.

POV-Ray A freely copyable raytracing (3D graphics) program, which is at home on many operating systems – including Linux.

Sphere Choice you also get alternative sphere sets to choose from (Figure 3).

All moves are saved internally by Kugel until you leave the program. If you have just played an especially good game, you can save the moves made by Kugel with the Save option in the File menu. With Load you can read such a sequence of moves back in. With Undo and Redo you can then follow the Kugel game's history.

Bonus

If you have been searching in vain for the glass spheres from Figure 2 in the sets, this sphere-set is one I created with **POV-Ray**. It can also be found on the cover CD and is installed with the following commands:

```
tar xzf povset.tgz
su (enter root password)
rm -f /usr/local/lib/kugel/images/set2/*.gif
cp [0-7].gif /usr/local/lib/kugel/images/set2/
exit
```

If you still need a reason to play: My highest score so far is 192 – and you have all of the weekend to beat this.

Info

Kugel homepage <http://www.vlptel.com/~vlatko/kugel>
 POV-Ray <http://www.povray.org/>