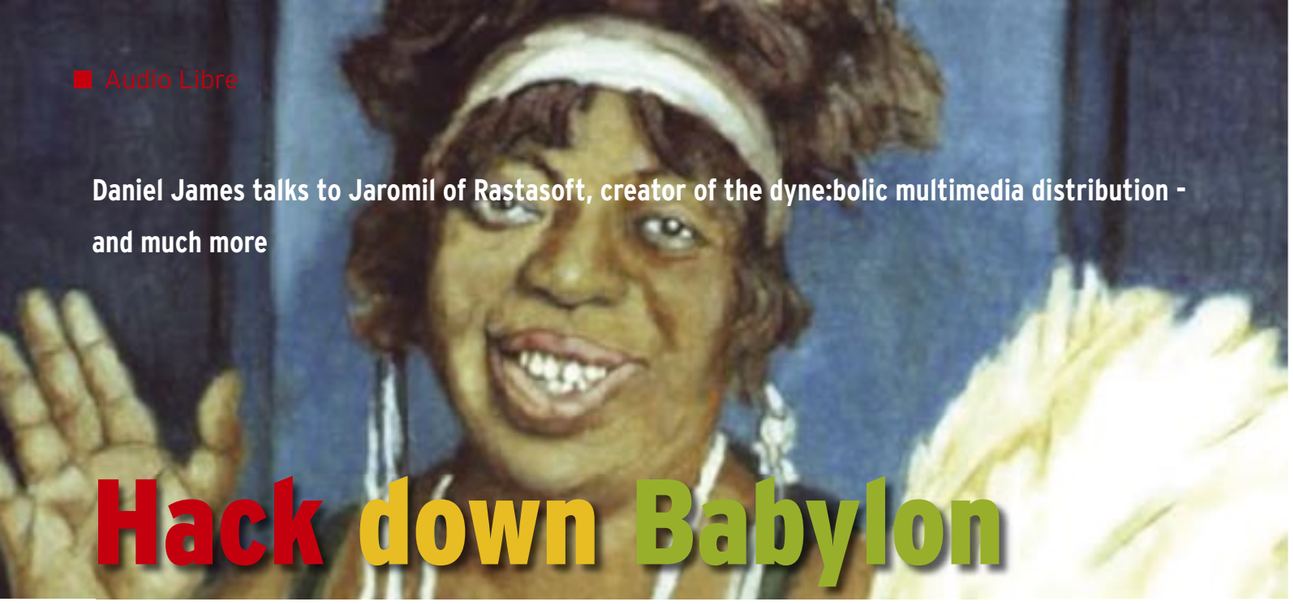


Daniel James talks to Jaromil of Rastasoft, creator of the dyne:bolic multimedia distribution - and much more

# Hack down Babylon

Jaromil, also known as Denis Rojo, is a free software developer, artist, author and the maintainer of the dyne:bolic bootable Linux multimedia distribution. He's also responsible for three Linux applications - the MuSE streaming audio server, the FreeJ video jockey tool and HasciiCam, which can serve video streams composed of ASCII characters. All of his software is released under the GNU General Public Licence - his principles as a software developer spring from his personal convictions as a Rastafarian.

A serial 'artist in residence', Jaromil's work has been featured in exhibitions around Europe and in north America. Born and brought up in Italy, he has founded a considerable number of creative projects since getting 'wired to the matrix', as he puts it, in 1991 when he discovered the BBS phenomenon. However, his introduction to computing came earlier still. "Back in the 80's I was a kid hanging around my parent's computer shop, which was just about my father, my mother and me - way before the big shopping chains got hold of the whole market in Italy. I was tuning Commodore 64 tape players and suggesting the cool games to our customers - I knew them all!"

"I started coding Basic when I was 12, then on the Amiga in Amos. After playing with Pascal and assembler on a 8088 machine, I finally approached C on the 386; since then it's become my favourite language. The code that I write today is C++ for better modularisation and abstraction of larger codebases. I love to solve simple tasks using shell scripting mixed with C, and in the case where an interface is needed I'm very comfortable with Glade-2 and libglade runtime rendering."

"My biggest fascination was the demo scene, realtime visuals and all the bells and whistles. But getting a licence for a compiler was quite a problem for my pocket, so I was an enthusiast for GNU/Linux since the early 90's, coming as it did with a free and open source compiler! In 2000 I registered the domain dyne.org and started publishing my code online using the GNU GPL free software licence: it started as a 'digital atelier', a lab for on-line development and a place to host and show off the creations of programmers. I'd like users to meet the artisans more often: to not only download a binary, but understand the spirit a piece of software is made with as well.

## IRIE LINUX

Jaromil started working on the dyne:bolic distribution when he faced the problem of trying to run his software on machines that had no Linux installation. "I saw a live CD for the first time in June 2001 at the hacker's meeting in Catania, Sicily, when the LOA hacklab came to visit the FreakNet medialab and brought the Bolic1 distribution with them. There I got the idea to make a bootable CD with MuSE on it, for doing radio streaming on the fly; just boot a computer and stream right away. That was the initial version of dyne:bolic, which has now grown to be a complete multimedia studio, thanks to the support and appreciation of many friends and contributors."

**I was an enthusiast for GNU/Linux since the early 90's, coming as it did with a free and open source compiler!**

A live distribution might not have been the most obvious solution for multimedia streaming in those days, given that it was generally thought of as a server-installed application - and still is. But Jaromil had other reasons for going down the bootable CD-ROM path. "I was unsatisfied with the complication of the repartition and install process which prevented most people from approaching GNU/Linux, plus I really needed a quick solution to employ the software I was producing. I wanted to do just a live CD, which would not overlap functionalities already offered by other distributions - so I wouldn't have to care about packaging and updating systems."

Unlike most Linux distributions, dyne:bolic wasn't based on an existing one. Jaromil's rather specialist needs from the distribution saw to that. "It was created from scratch. Some parts have been built using Gentoo, but most of it was compiled directly from source tarballs, and boot scripts were all written from the ground up. At the time I started, I didn't know the Linux from Scratch project, which is documenting a procedure like this very well: now I'm following it as a reference for the creation of the forthcoming dyne:II distribution.

The fact that dyne:bolic works on older hardware is personally important to Jaromil, for reasons of the widest possible public access to the technology. It will run on the original Pentium series of machines with quantities of RAM that would not be considered sufficient for a basic PC these days, let alone a multimedia workstation. "It's a core feature for dyne:bolic! Hardware recycling has been an important activity for the FreakNet Medialab, setting up free surfstations in a squatted building back in the early '90s. I come from that experience and that of the Hacklabs born all around Italy. It is about the politics and philosophy we developed in the Hackmeeting: in solidarity with the poor, and trying to fill the digital divide since the very beginning."

"But it is not only about broad accessibility: it's also about ecology, since the consumistical approach of wasting old hardware and buying new can harm the environment. I consider it an important issue in most fields of contemporary production: the capitalist system doesn't, but I'm not in it for the money."

## CHASE DEVIL OUTTA XBOX

If software has a Babylon, it's quite likely to be in Redmond. Jaromil and his free software represent the antithesis of everything the Gates empire stands for, so it's quite fitting that since the security flaws in the 'trusted computing' of the Xbox platform were revealed, it's now possible to run dyne:bolic on this loss-leading PC. "One day Smilzo, one of my best friends - we used to play role-playing games together since we were kids - pointed out the Xbox-Linux project and offered to port dyne:bolic to that console, since he'd just bought one."

"So he integrated the linux-xbox patch with the OpenMosix patch in a dyne:bolic Linux kernel, and now maintains that part of the distribution. It is amazing to convert a game console into a personal computer, to give people a cheap tool to surf the web, to accumulate the power of multiple consoles stacked into clusters, to have a way to recycle hardware that sooner or later kids will get bored of playing with. Xbox consoles perform very well with the latest dyne:bolic, especially as surf stations and music players."

The dyne:bolic distribution has a 'nest' feature, which comes in handy for personalisation when your distribution runs from read-only media. "Nesting is the ability to save the user settings on hard disc or USB key, all inside a single loopback file of 32 or more megabytes. It comes complete with small glade 2, C and shell based user-friendly interface."

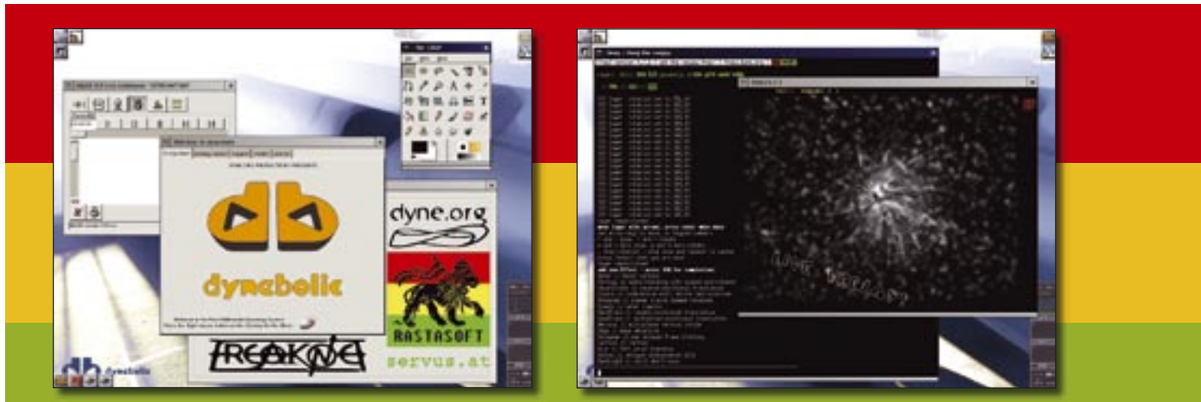
Jaromil also developed a 'dock' feature to take advantage of machines with hard discs, and overcome the performance limitations of running the entire distribution from an optical drive with relatively slow access. "Docking makes dyne:bolic really unique: you just need to copy the dyne/ directory on to a hard disc partition to run it locally the next time you boot it. The CD-ROM will find it while booting and eject itself. It's a very simple procedure for users willing to install: just drag the directory on to your hard disc icon, and there you go! This way, dyne:bolic achieves really high speed in booting and starting up applications, especially on game consoles. So far there is no other distribution implementing docking, although it was simple to realise - it's just dirty shell scripting!"

The OpenMosix clustering feature can be practical on the modestly-powered Xbox or older PC hardware, according to Jaromil. "It depends on the task you are running: with software that efficiently use multi-threading it can be really handy. When there are very slow computers clustered together with faster ones, you can notice the difference. Migration happens smoothly on audio and video software that runs rendering processes in parallel."

## THE DYNE:BOLIC FUTURE

Jaromil has already embarked on his plan to take the dyne:bolic distribution to the next level. "The dyne:II project has already started with the release of the 'zen room', the compile environment used to build it. It employs the new gcc 3.4 compiler and distcc clustering. This development module should open up possibilities for a group of hackers to customise and maintain dyne:bolic. It will have birth in summer - it's going to be hot, with the Linux 2.6 kernel and an up to date NPTL toolchain... and we are going cross platform. It will include a rapid application development tool - I'm thinking about Gambas. And full integration with a online server community, offering services like a streaming radio server. All this and more; and to be sure, it will not be a business!"

When asked what he thinks are the greatest challenges facing free software, Jaromil is reflective. "Be conscious of collaboration, as opposed to competition. We need to go through Modesty, Focus, Invention and Nature. And, I fear, Persecution."




The dyne:bolic distribution provides a highly portable set of media tools - and it will run on almost any PC

## Key Links

**The Dyne project**
www.dyne.org

**Rastasoft**
www.rastasoft.org

**Dyne:bolic**
www.dynebolic.org

**FreakNet**
www.freaknet.org

**Linux from Scratch**
www.linuxfromscratch.org

**The Xbox Linux Project**
www.xbox-linux.org

**OpenMosix clustering**
openmosix.sourceforge.net