The choice of an operative system for the ring nodes

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Chapter 1

An O.S. for nodes

Our ring is a class 1 Beowulf cluster. It is composed of low-power monoprocessor computers with 256 MB of memory, using Pentium2(r) @ 350 MHz CPUs. When we began building up our own ring, the first problem we had was to decide which O.S. to install on its nodes. We had no doubt about the kernel we would have used, which is Linux [www.kernel.org], and about the system tools too: we would have used the GNU [www.gnu.org] ones. We were in doubt about the GNU/Linux distribution. We decided the one which reflects our needs was among these ones: Mandrake, Debian, Gentoo, Slackware. So, we indipendently analyzed these four solutions.

1.1 Mandrake

A distribution whose developers modify the kernel so much. This takes to an exceeding kernel weight and to the activation of many unuseful tools. To avoid this, making a deep system clean after the installation would be enough; this however isn't a good method. Why did we include this in our range of choices, then? In our school there are many laboratories, half of them run Mandrake GNU/Linux. It's clear that we'd like to expand our activity out of a slow, small, seven nodes (seven-noded?!) ring; using labs as rings to run our programs would be a very nice thing. So, would have been a good thing to take confidence with Mandrake, foreseeing a wide use of it in big rings. After thinking a lot about it, we found that the disadvantages using it would have been more than the advantages.

1.2 Debian

We analyzed Debian beacuse Mr Carrer, the SCP project master, prefers it. He runs this ditribution at home, trying on it also parallel programs he/we write, and he warmly suggested us trying it out. But the installation test gave rise to many problems, that we couldn't work out easily and duly.

1.3   Gentoo

An increasingly diffused distribution day by day, which distinctive feature consists of its particular way of installing everything by compiling it each time, rather than using pre-compiled, with general compiler options, binaries. This takes to an increasing performance, and to a higher freedom of choice of the packets to install. This apparently was the distribution we needed, but the long time it takes to compile the initial system didn't allow us to opt for it, having just one afternoon a week to work on the project.

1.4   Slackware

Now, we had to analize four distributions, we have excluded three of them, you already know our final decision. The high accuracy it affords on the selection of the binary packets to install and its simplicity brought us to to choose this GNU/Linux O.S., Slackware. Slackware took less than half an hour to be installed on each of our P2@350 boxes.