



hands on

year 2000:unix

Graph

Delayed action



The **crunch** is coming... although not quite yet, says Chris Bidmead.

UNIX systems are inherently immune to the 'Year 2000' problem; for them, the crunch year comes 38 years later. This is because the 'Year Zero' chosen for the 30-year-old operating system was 1st January 1970. Since then, using a 32-bit number representation, UNIX systems everywhere have been ticking off the seconds. That particular clock will run out of ticks 2³¹ seconds after Year Zero, sometime early in 2038. The effect of this to anyone watching the UNIX clock at precisely 03:14:07 GMT on the 19th January that year will be a deeply mysterious return to 20:45:52 GMT on the 13th December 1901 — exactly one day late for Marconi's first-ever transmission of a radio signal across the Atlantic!

However, as systems engineer and Linux user Christopher Browne points out in his useful web page about the subject at www.ntlug.org/~cbbrowne, it's a fair bet that in the interim UNIX systems will have evolved to 64-bit implementations. Says Browne: 'That would handle dates up to something like the year 292,271,025,015 — well beyond the expected retirement dates of anyone likely to work on UNIX systems in the near future...'

Commercial UNIX users will need to seek advice from their suppliers — typically they will be recommended to upgrade to the latest version of the operating system and there will be replacements or patches to update the various associated utilities. Sun, for example, has a web page which sets out the

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1st January 1970**

company's year 2000 program. Among other options it offers a special leasing plan for customers who are testing Y2K compliance by running systems in parallel. There is also a freely downloadable software utility, called sunscan, which checks Sun software installed on Intel or Sparc Solaris systems against a database of known Y2K issues.

Users of IBM's AIX UNIX implementation will discover a complete online book discussing AIX and general UNIX Y2K issues at www.software.ibm.com/year2000/papers/aixy2k.html.

Particularly interesting is the list of older RS/6000 servers, workstations and laptops with known firmware date problems. In the UNIX world it's not uncommon to find relatively ancient versions of the operating system still in current use, but if you are still running AIX version 3.1 and older — which are not Y2K compliant — you are strongly advised to upgrade to a later version. However, later versions of AIX (3.2 or greater) can be patched with individual fixes which IBM supplies.

These patches, called APAR's, can be downloaded from the internet. IBM also provides an online database with the Y2K status of all of its AIX software offerings at www.ibm.com/IBM/year2000.

Lawyers are gleefully sharpening their pencils in anticipation of plenty of action around commercial UNIX Y2K issues. The US web page at www.year2000.com/y2klawcenter.html is one of many which should help provide you with a feel for what's at stake.

For users of free UNIX-like operating systems, the Y2K issue is much simpler. They won't find themselves embroiled in complex and costly legal suits because there is no-one to sue. Linux, for instance, is distributed under the Free Software Foundation's (FSF) General Public Licence which, in essence, states: 'If it breaks, you get to keep both halves'. You would be wrong, though, to infer from this that the



**▲ SUN'S WEB PAGE AT
www.sun.com/y2000
SETS OUT THE COMPANY'S
YEAR 2000 PROGRAM**

authors of the software do not care, or are turning a blind eye. While the operating system itself appears Y2K-proof, there may certainly be date issues with some of system utilities and tools, many of which are of venerable origin. The FSF's web site at www.fsf.org/software/year2000-list.html carries a list of tested and not-yet-tested software and reports on its date-related reliability. **Two other** obvious issues are date handling in applications, and the way the computer's own BIOS firmware keeps track of time. These are general problems beyond the strict scope of a UNIX discussion, but should certainly be taken into account in any real-world audit.

PCW CONTACTS

Chris Bidmead welcomes your comments. Contacted him via the PCW editorial office (address, p10) or email unix@pcw.co.uk
• Sun's web page at www.sun.com/y2000 sets out the company's Year 2000 program