Year 2038 Problem Checklist: What to Check on 32-Bit Clocks

The limit moment, the 2106 limit and six places to look

WHERE A 32-BIT SECONDS COUNTER CAN HIDE (THE LIST IS OURS)

Devices and software

- [ ] Note the model and age of each device that keeps its own clock
- [ ] Ask the maker whether the firmware stores time in 64 bits
- [ ] Check whether the software uses a 32-bit time type (on Windows, _USE_32BIT_TIME_T)

Files and records

- [ ] Find file formats and databases that store a time as one 32-bit number
- [ ] Test a date after Jan. 19, 2038, such as a loan or a lease end date
- [ ] Write each answer and the date you asked next to the item

Good to know

- Unix time counts from the Epoch: 0:00:00 on Jan. 1, 1970 UTC.
- Microsoft advises against _USE_32BIT_TIME_T because an application may fail after Jan. 18, 2038.
- glibc 2.40 widened some login-record fields to hold timestamps until the year 2106.

My notes

Source: The Open Group Base Specifications Issue 7; Microsoft Learn, time, _time32, _time64; glibc 2.40 release notes. The limit moments are our calculation.