

It's The End of the World...

(in 21 Years)



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Agenda

- What's up?
- When does it happen?
- What needs doing?
- Current state
- Discussion
- Take notes in gobby please!
 - `gobby.debian.org`
 - `Debconf17/bof/2038`



What's up?

- UNIX `time_t` is a **signed** 32-bit integer
- Counts seconds since Jan 1, 1970
- It's going to wrap!
- Used **everywhere**
- Imagine Y2K...
 - ...but worse

WC PGW?





When does it happen?

```
$ date --date=@$( (2**31-1) ) -u
```

```
Tue 19 Jan 03:14:07 UTC 2038
```



What needs doing?

Lots of fixes needed up the stack:

- Data formats (filesystems, ...)
- Kernel internals
- Kernel interfaces
- Libraries
 - glibc folks have plans, others?
- Applications



Linux kernel

- Project led by Deepa Dinamani and Arnd Bergmann
 - <https://kernelnewbies.org/y2038>
 - y2038@lists.linaro.org
 - Adding 64-bit code
 - Fixing up drivers
 - Adding new versions of interfaces (syscalls, ioctls)
 - Lots of tasks – please help!

Glibc



- Planning ongoing – DRAFT status atm
 - <https://sourceware.org/glibc/wiki/Y2038ProofnessDesign>
 - Provide 64-bit time support
 - Continue supporting 32-bit time support
 - More coverage
 - <https://lwn.net/Articles/664800/>
 - Will depend on a Y2038-safe kernel
 - Lots of work to do; still planning it



Elsewhere?

- Other work (mostly) blocked on kernel/glibc progress?
- I haven't looked at other kernels...
- Lots of libraries will need updates
 - Look for `time_t` / `timeval` / `timespec`
- Mass rebuilds
- Automated scanning (abi-compliance-checker)



Things to do now

- Help with the kernel and glibc work!
- Check your code
- Check your dependencies
- **Don't** bodge around this
 - Don't store time values in weird formats!

Thanks



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