What are you sharing between threads?

Easy

Hard

Are you sharing or passing objects between threads?

Passing → FIFOs

Sharing ↓

Are you interacting with a real-time thread?

No → Use locks

Yes ↓

Are you sharing "suitably small" data?

Yes → Use std::atomic

No ↓

Is failure to acquire the resource ok?

Yes → Use trylock

No ↓

Does the real-time thread mutate the object?

No → CAS loop

Yes ↓

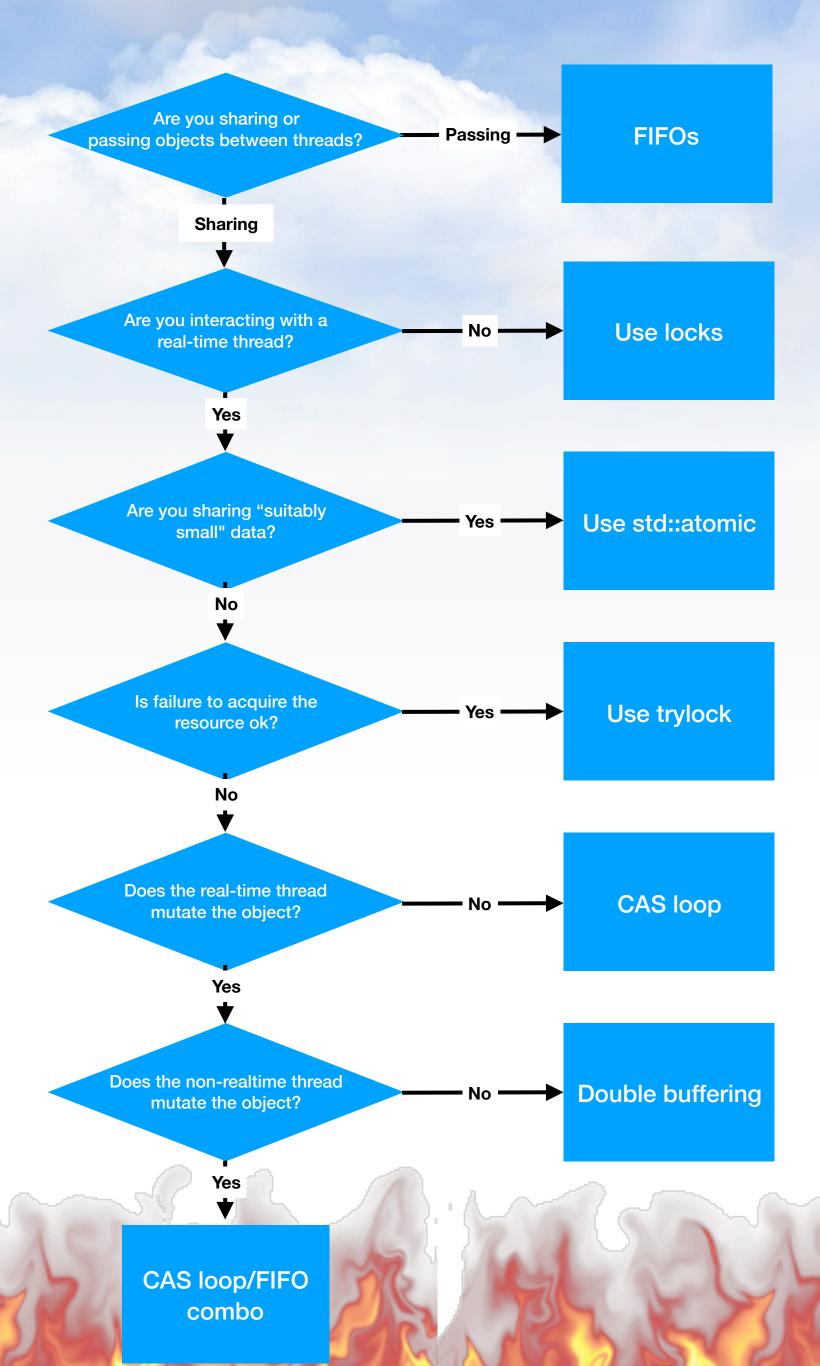Does the non-realtime thread mutate the object?

No → Double buffering

Yes ↓

CAS loop/FIFO combo

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The `farbot` Library

- A collection of realtime design patterns and debugging tools

- Collected over years of realtime programming

- Uses `std::memory_order_*` to optimise performance

- Most design patterns have been used in production code

- Still early alpha development!

- Please contribute:

https://github.com/hogliux/farbot