
Subject: Re: MT and variables simple question
Posted by [mirek](#) on Wed, 11 Jun 2014 06:16:29 GMT
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ManfredHerr wrote on Tue, 10 June 2014 15:59My two cents:
Mutex locks are necessary only then when the "variable" is compound. For example the mentioned fifo. It must be guaranteed that the full fifo entry is written before a second thread can interrupt and read it. For simple variables like integers a.s.o. there is no need to protect because they are written and read in an "atomic" action. The writing thread cannot be interrupted during the write-operation.

Just to clarify, read/write is perhaps atomic, but a combination of them is not. Consider simple

```
int x;  
...  
x++;
```

this is broken in MT, because ++ are TWO atomic operations with respect to memory variable (read AND write), despite the fact that ISA is realizing that operation with single CPU opcode.

Also, you need to carefully check your ISA to find out what fundamental types are really atomic. Plus be prepared for nasty effects like read/write reordering (use memory barriers).