Subject: Subject : locks, semaphores, and such
Posted by Ken Mankoff on Sun, 27 Jan 2002 04:27:33 GMT
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Hi,

I need to create a unique directory to do some work in. This is a web-based IDL script (through ION), and multiple people may access the site at the same second. Each user gets their images generated in a uniquely named directory, which is then deleted 5 minutes later...

I know a bunch about semaphores and threads and stuff like that, but here is the problem. The "threads" (users) do not have inter-thread communication, unless its through files on disk. If they did, this would be a perfect use for COMMON blocks. Also, the web server has 2 CPUs so much of the traditional semaphore logic is invalid, as both threads can acquire a lock on the same clock cycle.

Here is the code I currently use to lock a file:

```
uniq = strtrim( long( systime( 1 ) ), 2 )
repeat begin
  uniq = uniq + 1L
  f = findfile(uniq,count=cnt)  ; [1] ; find unclaimed file
endrep until cnt eq 0           ; [2]
spawn, 'touch ' + file          ; [3] ; claim file
spawn, 'rm ' + file + ' | at now + 5 minutes'  ; free file later
```

Of course, there are multiple clock cycles and disk accesses between when [1] loads a "0" into cnt, and when [3] finishes executing the 'touch' part of the command.

The system this runs on is 5 people on 5 computers using 5 different IDL sessions all sharing 1 cross-mounted disk. So far, the bug has never evolved into an error :)

At worst, can anyone think of a way to detect if multiple users got assigned the same directory and at least fail gracefully? At best, does anyone have an algorithm pre-built for just this purpose?

Thanks,
  Ken Mankoff

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