Timers

What to Expect?

* Alarm based Trivial Timer

* Interval Timers based on other Signals

Trivial Timer

* Based on the alarm signal (SIGALRM)

* One Timer per Process

* Timer resolution is in seconds

* Activated using the alarm() system call

  * Any subsequent calls to alarm cancels the previous ones, if not already triggered

* Triggered after seconds specified in last alarm() call

* SIGALRM handler is the timer handler

* One shot behaviour, unless activated again

Other User Space Timers

* Based on Interval Timers
* Total of three timers possible per Process
    * ITIMER_REAL (Based on real time) – SIGALRM
    * ITIMER_VIRTUAL (Based on execution time) – SIGVTALRM
    * ITIMER_PROF (Based on overall execution time) – SIGPROF
* Timer Resolution is in micro seconds
    * Though expiry may be a little later
* Activated using setitimer system call
    * And can be queried using gettimer system call
* Triggered Periodically, every interval, after current value
    * As specified in the setitimer call
    * From the call to setitimer

Other User Space Timers ...

* POSIX.1-2008 marks the setitimer / getitimer calls obsolete

* Rather recommends the following

  * timer_settime, timer_gettime

  * timer_create, timer_delete

  * timer_getoverrun

* With these, many more interval timers could be used

  * Using signals other than the 3 usual ones

  * Also including the real-time signals

What all have we learnt?

* Alarm based Trivial Timer

* Interval Timers based on other Signals

Any Queries?