Checking the Time Remaining in a PBS Job from a Fortran Code

Category: Effective Use of PBS

During job execution, sometimes it is useful to find out the amount of time remaining for your PBS job. This allows you to decide if you want to gracefully dump restart files and exit before PBS kills the job.

If you have an MPI code, you can call MPI_WTIME and see if the elapsed walltime has exceeded some threshold to decide if the code should go into the shutdown phase.

For example:

```
include "mpif.h"

real (kind=8) :: begin_time, end_time

begin_time=MPI_WTIME()
do work
end_time = MPI_WTIME()

if (end_time - begin_time > XXXXX) then
   go to shutdown
endif
```

In addition, the following library has been made available on Pleiades for the same purpose:

`/u/scicon/tools/lib/pbs_time_left.a`

To use this library in your Fortran code, you need to:

1. Modify your Fortran code to define an external subroutine and an integer*8 variable
   ```
   external pbs_time_left
   integer*8 seconds_left
   ```
2. Call the subroutine in the relevant code segment where you want the check to be performed
   ```
   call pbs_time_left(seconds_left)
   print*,"Seconds remaining in PBS job:",seconds_left
   ```

   Note: The return value from **`pbs_time_left`** is only accurate to within a minute or two.
3. Compile your modified code and link with the above library using, for example:
   `LDFLAGS=/u/scicon/tools/lib/pbs_time_left.a`

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