

```

C -----
C matrix multiplication
C
C 0. choose appropriate compiler version e.g.
C
C     module load intelcompiler/composer_xe_2013.4.183
C
C 1. compile with automatic parallelization and highest reporting level
C
C     ifort -mcmmodel=medium -shared-intel
C         -O3 -parallel -par-report3 matmult.f -o matmult
C
C 2. set number of threads and prohibit dynamic adjustment of number
C
C     export set OMP_DYNAMIC=FALSE
C     export set OMP_NUM_THREADS=<number of threads>
C
C     optionally bind threads to processes by *one* of the following:
C
C     export set GOMP_CPU_AFFINITY="0 1 2 3"
C
C     export set KMP_AFFINITY=
C         "verbose,granularity=core,explicit,proclist=[0,1,2,3]"
C
C 3. prepare runtime monitoring in other window showing all threads
C
C     top -u <username> -H
C
C 4. execute with timing switched on
C
C     time ./matmult
C -----
C PROGRAM main
C
C INTEGER N, I, J, K
C PARAMETER (N = 32768)
C
C REAL A(N,N), B(N,N), C(N,N)
C
C DO I=1,N
C   DO J=1,N
C     C(I,J) = 0
C     DO K=1,N
C       C(I,J) = C(I,J)+A(I,K)*B(K,j)
C     ENDDO
C   ENDDO
C ENDDO
C
C DO I=1,N
C   DO J=1,N
C     PRINT *, C(I,J)
C   ENDDO
C ENDDO
C
C END

```