OMPM2001 Result

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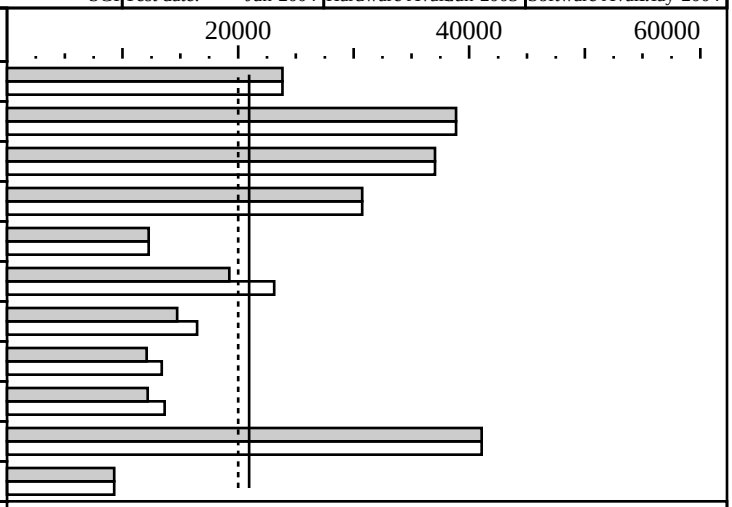
SGI
SGI Altix 3000 (1500MHz, Itanium 2)

SPECompMpeak2001 = 20958

SPECompMbase2001 = 20006

SPEC license #: HPG0014 | Tested by: SGI | Test site: SGI | Test date: Jun-2004 | Hardware Avail: Jun-2003 | Software Avail: May-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	252	23839	252	23839
312.swim_m	6000	154	38873	154	38873
314.mgrid_m	7300	197	37037	197	37037
316.applu_m	4000	130	30733	130	30733
318.galgel_m	5100	416	12260	416	12260
320.equake_m	2600	135	19240	112	23128
324.apsi_m	3400	231	14725	207	16452
326.gafort_m	8700	720	12086	650	13391
328.fma3d_m	4600	378	12175	337	13642
330.art_m	6400	156	41083	156	41083
332.ammp_m	7000	755	9277	755	9277



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	16 cores, 16 chips, 1 core/chip
CPU(s) orderable:	4-256
Primary Cache:	16KBI + 16KBD (on chip) per core
Secondary Cache:	256KB (on chip) per core
L3 Cache:	6.0MB (on chip) per core
Other Cache:	N/A
Memory:	64 GB (32*512MB PC2700 DIMMS per 4 core module)
Disk Subsystem:	1 x 36 GB SCSI (Seagate Cheetah 15k rpm)
Other Hardware:	None

Software

OpenMP Threads:	16
Parallel:	OpenMP
Operating System:	SGI ProPack(TM) 3
Compiler:	Intel(R) Fortran Compiler for Linux 8.0 (Build 20040519) Intel(R) C++ Compiler for Linux 8.0 (Build 20040519)
File System:	xfs
System State:	Multi-user

Notes/Tuning Information

```
Baseline optimization flags:
  C programs:       -openmp -O3 -ipo -ansi -ansi_alias -auto_ilp32 (ONESTEP)
  Fortran programs: -openmp -O3 -ipo (ONESTEP)
  OpenMP runtime library libguide.a statically linked

Portability Flags:
  318.galgel_m: -FI -132

Extra Flags:
  330.art_m: -DINTS_PER_CACHELINE=32 -DDBLS_PER_CACHELINE=16

Baseline user environment:
  OMP_NUM_THREADS 16
  limit stacksize 64000
  KMP_STACKSIZE 31M
  KMP_LIBRARY TURNAROUND
  OMP_DYNAMIC FALSE
  KMP_SCHEDULE static,balanced


Peak optimization flags:
   310.wupwise_m: basepeak=true
   312.swim_m: basepeak=true
```

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Notes/Tuning Information (Continued)

```
    314.mgrid_m: basepeak=true
    316.applu_m: basepeak=true
    318.galgel_m: basepeak=true
    320.equake_m: -openmp -O3 -ipo -ansi -ansi_alias -auto_ilp32 (ONESTEP)
    324.apsi_m: -openmp -O3 -ipo (ONESTEP)
    326.gafort_m: -openmp -O3 -ipo (ONESTEP)
    328.fma3d_m: -openmp -O3 -ipo (ONESTEP)
    330.art_m: basepeak=true
    332.ammp_m: basepeak=true

Alternate sources:
Add critical region around update of linked list in parallel loop.
Approved src.alt available as ompm-purdue1-20040324.tar.gz
Used for 330.art_m, base and peak.

Peak sources:
SPEC OMPL2001 source for 64bit systems modified for SPEC OMPM2001.
Available as ompl src.alt in SPEC OMP v3.0
Used for 320.equake_m, 324.apsi_m, 326.gafort_m, and 328.fma3d_m.

For all benchmarks threads were bound to cores using the following submit command:
dplace -x2 -cNTM1,0 $command,
where NTM1 is the number of threads minus 1.
This binds threads in order of creation, beginning with the master
thread on core NTM1, the first slave thread on core NTM1-1, and so on.
The -x2 flag instructs dplace to skip placement of the lightweight
OpenMP monitor thread, which is created prior to the slave threads.
```