OMPM2001 Result

SGI

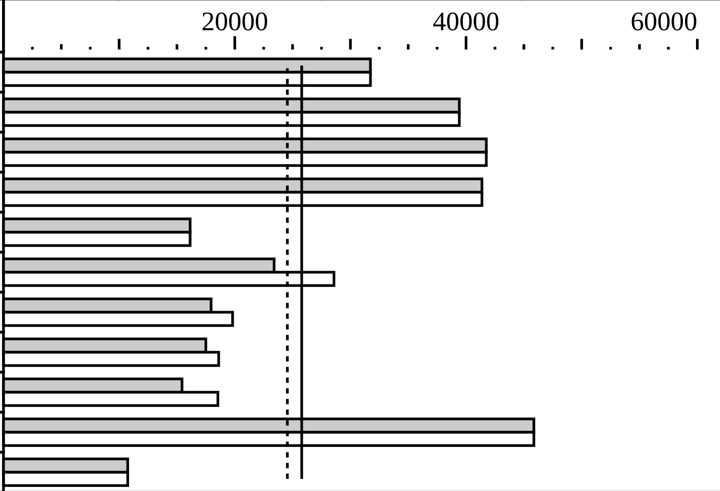
SGI Altix 3700 Bx2 (1600MHz 9M L3, Itanium 2)

SPECompMpeak2001 = 25789

SPECompMbase2001 = 24547

SPEC license #:	Tested by:	Test site:	Test date:	Hardware Avail:	Software Avail:
HPG0014	SGI	SGI	Oct-2004	Nov-2004	Nov-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	189	31730	189	31730
312.swim_m	6000	152	39417	152	39417
314.mgrid_m	7300	175	41754	175	41754
316.applu_m	4000	96.7	41376	96.7	41376
318.galgel_m	5100	316	16139	316	16139
320.equake_m	2600	111	23403	91.0	28579
324.apsi_m	3400	189	17952	172	19812
326.gafort_m	8700	497	17499	468	18606
328.fma3d_m	4600	298	15436	248	18539
330.art_m	6400	140	45867	140	45867
332.ammp_m	7000	652	10741	652	10741



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	16 cores, 16 chips, 1 core/chip
CPU(s) orderable:	8-512
Primary Cache:	16KBI + 16KBD (on chip) per core
Secondary Cache:	256KB (on chip) per core
L3 Cache:	9.0MB (on chip) per core
Other Cache:	N/A
Memory:	64 GB (32*1024MB PC2700 DIMMS per 8 core module)
Disk Subsystem:	16x73GB FC Seagate Cheetah 15K rpm (striped)
Other Hardware:	None

Software

OpenMP Threads:	16
Parallel:	OpenMP
Operating System:	SGI ProPack(TM) 3 Service Pack 1
Compiler:	Intel(R) Fortran Compiler for Linux 8.1 (Build 20041021) Intel(R) C++ Compiler for Linux 8.1 (Build 20041021)
File System:	xfs
System State:	Multi-user

Notes/Tuning Information

```
Baseline optimization flags:
  C programs:      -openmp -O3 -IPF_fp_relaxed -ipo -ansi -ansi_alias -auto_ilp32 (ONESTEP)
  Fortran programs: -openmp -O3 -IPF_fp_relaxed -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

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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SPEC license #: HPG0014	Tested by: SGI	Test site: SGI	Test date: Oct-2004	Hardware Avail: Nov-2004	Software Avail: Nov-2004

Notes/Tuning Information (Continued)

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

Required 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.

For a description of SGI's compiler flags, portability flags, and
system parameters used to generate this result, please refer to the
SGI-20041118-Linux-Intel8.1-IPF.txt file in the flags directory.
```