OMPM2001 Result

Copyright ©1999-2002, Standard Performance Evaluation Corporation

SGI

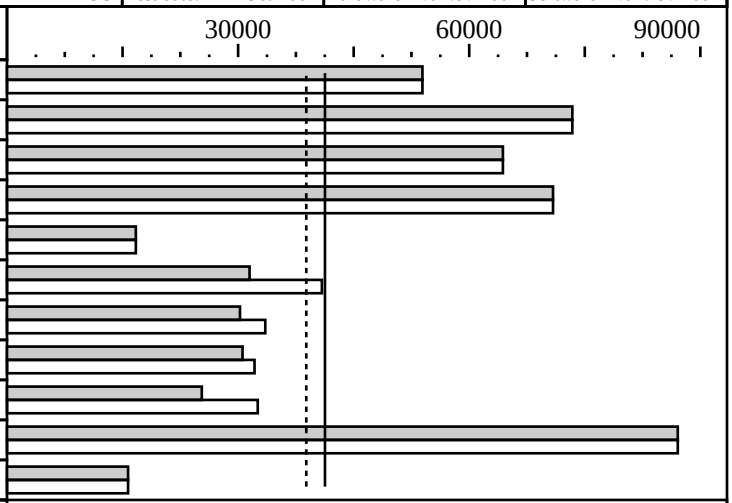
SGI Altix 3700 Bx2 (1600MHz 9M L3, Itanium 2)

SPECompMpeak2001 = 41275

SPECompMbase2001 = 38849

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	111	53927	111	53927
312.swim_m	6000	81.8	73386	81.8	73386
314.mgrid_m	7300	113	64371	113	64371
316.applu_m	4000	56.4	70878	56.4	70878
318.galgel_m	5100	305	16724	305	16724
320.equake_m	2600	82.6	31487	63.6	40875
324.apsi_m	3400	112	30243	101	33527
326.gafort_m	8700	285	30575	271	32132
328.fma3d_m	4600	182	25286	141	32549
330.art_m	6400	73.5	87073	73.5	87073
332.ammp_m	7000	445	15716	445	15716



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	32 cores, 32 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:	128 GB (32*1024MB PC2700 DIMMS per 8 core module)
Disk Subsystem:	16x73GB FC Seagate Cheetah 15K rpm (striped)
Other Hardware:	None

Software

OpenMP Threads:	32
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 32
   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
```

Copyright ©1999-2002, Standard Performance Evaluation Corporation

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.
```