OMPM2001 Result

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SGI

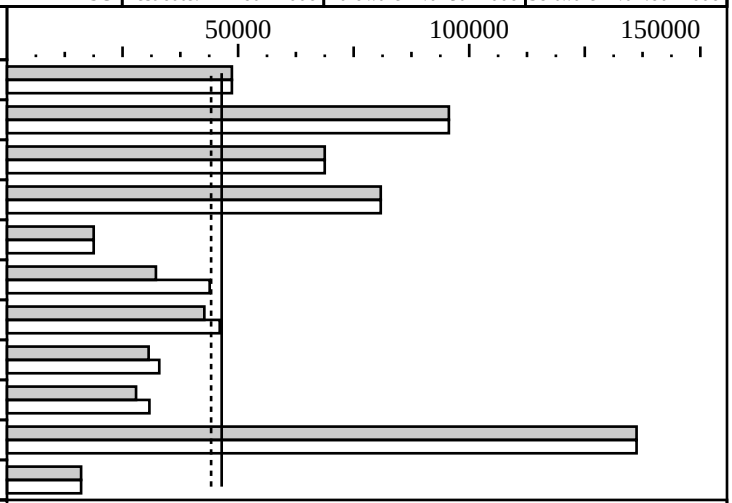
SGI Altix 4700 Bandwidth System (1600MHz 24M L3, DC Itanium2 9050)

SPECompMpeak2001 = 46444

SPECompMbase2001 = 44161

SPEC license #HPG0014 | Tested by: SGI | Test site: SGI | Test date: Jun-2006 | Hardware Avail:Jul-2006 | Software Avail: Jul-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	123	48654	123	48654
312.swim_m	6000	62.8	95598	62.8	95598
314.mgrid_m	7300	106	68739	106	68739
316.applu_m	4000	49.5	80859	49.5	80859
318.galgel_m	5100	272	18754	272	18754
320.equake_m	2600	80.7	32217	59.3	43850
324.apsi_m	3400	79.6	42693	73.9	46024
326.gafort_m	8700	284	30641	264	32943
328.fma3d_m	4600	165	27921	149	30811
330.art_m	6400	47.0	136205	47.0	136205
332.ammp_m	7000	437	16032	437	16032



Hardware

CPU:	Intel DC Itanium2 Processor 9050 (533 MHz FSB)
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip (Hyper-Threading Technology disabled)
CPU(s) orderable:	1-512 chips
Primary Cache:	16KBI + 16KBD (on chip) per core
Secondary Cache:	1MBI + 256KBD (on chip) per core
L3 Cache:	12.0MB (on chip) per core
Other Cache:	N/A
Memory:	128 GB (8*1GB PC2-3200 DIMMS per 1-chip module)
Disk Subsystem:	1 x 147 GB SCSI (Seagate Cheetah 10k rpm)
Other Hardware:	None

Software

OpenMP Threads:	32
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 10 + SGI ProPack(TM) 5
Compiler:	Intel(R) Fortran Compiler for Linux 9.0 (Build 20060223) Intel(R) C++ Compiler for Linux 9.0 (Build 20060223)
File System:	xfs
System State:	Multi-user

Notes/Tuning Information

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

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Notes/Tuning Information (Continued)

```
    312.swim_m: basepeak=true
    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_alias -auto_ilp32 (ONESTEP)
    OpenMP runtime library libguide.a statically linked
    324.apsi_m: -openmp -O3 -IPF_fp_relaxed -ipo (ONESTEP)
    OpenMP runtime library libguide.a statically linked
    326.gafort_m: -openmp -O3 -IPF_fp_relaxed -ipo (ONESTEP)
    OpenMP runtime library libguide.a statically linked
    328.fma3d_m: -openmp -O3 -IPF_fp_relaxed -ipo (ONESTEP)
    OpenMP runtime library libguide.a statically linked
    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-20061229-Linux-Intel9.0-IPF.txt file in the flags directory.
```