OMPM2001 Result

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SGI

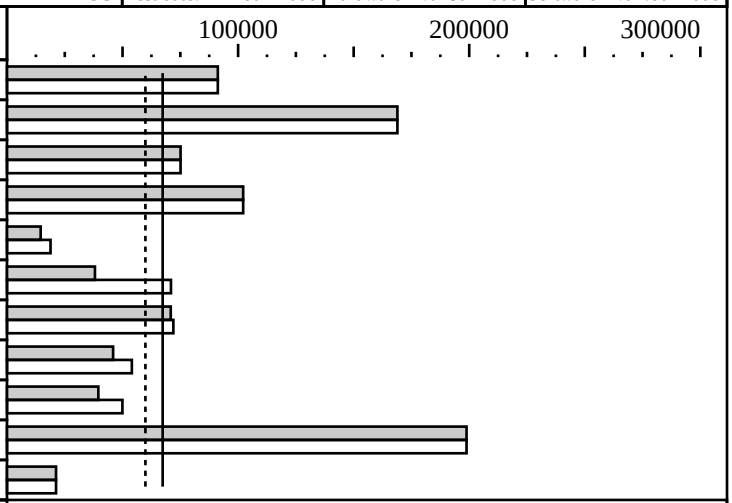
SGI Altix 4700 Bandwidth System (1600MHz 24M L3, DC Itanium2 9050)

SPECompMpeak2001 = 67356

SPECompMbase2001 = 59891

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	65.8	91220	65.8	91220
312.swim_m	6000	35.5	168924	35.5	168924
314.mgrid_m	7300	97.2	75100	97.2	75100
316.applu_m	4000	39.1	102188	39.1	102188
318.galgel_m	5100	350	14572	271	18835
320.equake_m	2600	68.3	38054	36.6	70947
324.apsi_m	3400	48.0	70848	47.2	71983
326.gafort_m	8700	189	45912	161	54022
328.fma3d_m	4600	116	39520	92.1	49941
330.art_m	6400	32.2	198842	32.2	198842
332.ammp_m	7000	330	21217	330	21217



Hardware

CPU:	Intel DC Itanium2 Processor 9050 (533 MHz FSB)
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	64 cores, 32 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:	256 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:	64
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 64
  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: -openmp -O3 -IPF_fp_relaxed -ipo (ONESTEP)
    OpenMP runtime library libguide.a statically linked
                  OMP_NUM_THREADS=32
    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.
```