OMPM2001 Result

SGI Altix 3000 (1500MHz, Itanium 2)

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

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<td>330.art_m</td>
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<td>332.ammp_m</td>
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<td>755</td>
<td>9277</td>
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<td>9277</td>
</tr>
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</table>

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 + 16KBID (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

Standard Performance Evaluation Corporation
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SGI
SGI Altix 3000 (1500MHz, Itanium 2)

SPECompMpeak2001 = 20958
SPECompMbase2001 = 20006

Notes/Tuning Information (Continued)

314.mgrid_m: basepeak=true
316.applua_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 OMML2001 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.