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

**SPECompMpeak2001 = 63037**

**SPECompMbase2001 = 56937**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Reference Time</th>
<th>Base Runtime</th>
<th>Base Ratio</th>
<th>Peak Runtime</th>
<th>Peak Ratio 100000</th>
<th>200000</th>
<th>300000</th>
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<tbody>
<tr>
<td>310.wupwise_m</td>
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<td>318.galgel_m</td>
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<td>310</td>
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<td>320.equake_m</td>
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<td>324.apsi_m</td>
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<td>332.ammp_m</td>
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<td>22020</td>
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</tr>
</tbody>
</table>

**Hardware**

- CPU: Intel Itanium 2
- CPU MHz: 1600
- FPU: Integrated
- CPU(s) enabled: 64 cores, 64 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: 256 GB (32*1024MB PC2700 DIMMS per 8 core module)
- Disk Subsystem: 16x73GB FC Seagate Cheetah 15K rpm (striped)
- Other Hardware: None

**Software**

- OpenMP Threads: 64
- 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 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
- 312.swim_m: basepeak=true
SGI
SGI Altix 3700 Bx2 (1600MHz 9M L3, Itanium 2)

SPECompMpeak2001 = 63037
SPECompMbase2001 = 56937

Notes/Tuning Information (Continued)

314.mgrid_m: basepeak=true
316.applu_m: basepeak=true
318.galgel_m: -openmp -O3 -IPF_fp_relaxed -ipo (ONESTEP)
            OMP_NUM_THREADS=32
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:
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.