## OMPM2001 Result

### SGI

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

<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</th>
<th>50000</th>
<th>100000</th>
<th>150000</th>
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<tbody>
<tr>
<td>310.wupwise_m</td>
<td>6000</td>
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</table>

### 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)
- **File System:** xfs
- **System State:** Multi-user

### Notes/Tuning Information

**Baseline optimization flags:**
- C programs: -openmp -03 -IPF_fp_relaxed -ipo -ansi_alias -auto_ilp32 (ONESTEP)
- Fortran programs: -openmp -03 -IPF_fp_relaxed -ipo (ONESTEP)

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

SPECompMpeak2001 = 46444
SPECompMbase2001 = 44161

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:
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-Intel19.0-IPF.txt file in the flags directory.