OMPL2001 Result

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SGI

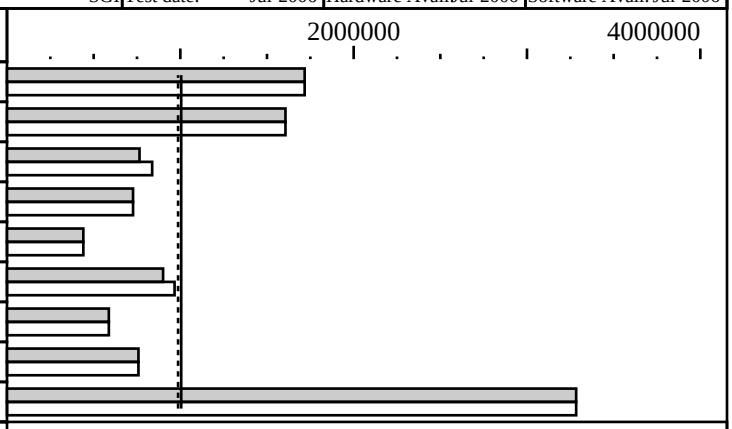
SGI Altix 4700 Density System (1600MHz 24M L3, DC Itanium2 9050)

SPECompLpeak2001 = 1005076

SPECompLbase2001 = 987139

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	85.7	1717280	85.7	1717280
313.swim_l	12500	124	1606568	124	1606568
315.mgrid_l	13500	283	764544	258	837444
317.applu_l	13500	297	727215	297	727215
321.equake_l	13000	472	440372	472	440372
325.apsi_l	10500	187	900515	174	966762
327.gafort_l	11000	300	587544	300	587544
329.fma3d_l	23500	496	758395	496	758395
331.art_l	25000	122	3283637	122	3283637



Hardware

CPU:	Intel DC Itanium2 Processor 9050
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	256 cores, 128 chips, 2 cores/chip (Hyper-Threading Technology disabled)
CPU(s) orderable:	2-1024 cores
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:	512 GB (8*1G PC3200 DIMMS per 4 core module)
Disk Subsystem:	1 x 147 GB SCSI (Seagate Cheetah 10k rpm)
Other Hardware:	None

Software

OpenMP Threads:	256
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 10 + SGI ProPack(TM) 5
Compiler:	Intel(R) Fortran Compiler for Linux 9.1 (Build 20060707) Intel(R) C++ Compiler for Linux 9.1 (Build 20060707)
File System:	xfs
System State:	Multi-user

Notes/Tuning Information

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

Extra Flags:
  331.art_l: -DINTS_PER_CACHELINE=32 -DDBLS_PER_CACHELINE=16

User environment:
  OMP_NUM_THREADS 256
  limit stacksize 128000
  KMP_STACKSIZE 124M
  KMP_LIBRARY TURNAROUND
  OMP_DYNAMIC FALSE
  KMP_SCHEDULE static,balanced

Peak optimization flags
311.wupwise_l: basepeak=true
313.swim_l: basepeak=true
315.mgrid_l: -openmp -O3 -IPF_fp_relaxed -ipo
             OpenMP runtime library libguide.a statically linked
             OMP_NUM_THREADS = 128
             submit = dplace -x2 -e -c255-0:2 $command
317.applu_l: basepeak=true
321.equake_l: basepeak=true
325.apsi_l: -openmp -O3 -IPF_fp_relaxed -ipo
```

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Notes/Tuning Information (Continued)

```
            OpenMP runtime library libguide.a statically linked
            OMP_NUM_THREADS = 128
            submit = dplace -x2 -e -c255-0:2 $command
327.gafort_l: basepeak=true
329.fma3d_l: basepeak=true
331.art_l: basepeak=true

Required alternate sources:
Add critical region around update of linked list in parallel loop.
Approved src.alt available as ompl-purdue1-20040324.tar.gz
Used for 331.art_l, base and peak.


For all benchmarks threads were bound to cores using the following submit command:
dplace -x2 -e -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-20060801-Linux-Intel9.1-IPF.txt file in the flags directory.
```