OMPL2001 Result

SGI

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

SPECompLpeak2001 = --
SPECompLbase2001 = 863761

Benchmark | Reference Time | Base Runtime | Base Ratio | Peak Runtime | Peak Ratio
--- | --- | --- | --- | --- | ---
311.wupwise | 9200 | 196 | 752311 | 2000000 |
313.swim | 12500 | 128 | 1568216 |
315.mgrid | 13500 | 253 | 853596 |
317.applu | 13500 | 299 | 721345 |
321.equake | 13000 | 494 | 421300 |
325.apsi | 10500 | 172 | 977450 |
327.gafort | 11000 | 344 | 511302 |
329.fma3d | 23500 | 632 | 595305 |
331.art | 25000 | 136 | 2939261 |

CPU: Intel DC Itanium2 Processor 9050 (533 MHz FSB)
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 128 cores, 64 chips, 2 core/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 PC2-3200 DIMMS per 2 core module)
Disk Subsystem: 1 x 147 GB SCSI (Seagate Cheetah 10k rpm)
Software
OpenMP Threads: 128
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 (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 128
limit stacksize 128000
KMP_STACKSIZE 124M
KMP_LIBRARY TURNAROUND
OMP_DYNAMIC FALSE
KMP_SCHEDULE static,balanced

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.

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.
OMPL2001 Result

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

SPECompLpeak2001 = --
SPECompLbase2001 = 863761

Notes/Tuning Information (Continued)

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. System was configured to 64 chips by disabling extra chips at PROM.

For a description of SGI's compiler flags, portability flags, and system parameters used to generate this result, please refer to the SGI-20060719-Linux-Intel9.0-IPF.txt file in the flags directory.