OMPL2001 Result

Hewlett-Packard Company
HP Integrity Superdome 64-way (1500 MHz Itanium 2)

SPECompLpeak2001 = 271659
SPECompLbase2001 = 257702

Hewlett-Packard Company

SPE license #HPG2116
Tested by: Hewlett-Packard Company
Test site: Richardson, Texas
Test date: Aug-2003
Hardware Avail: Oct-2003
Software Avail: Oct-2003

Benchmark | Reference Time | Base Runtime | Base Ratio | Peak Runtime | Peak Ratio | 200000 | 400000 | 600000
--- | --- | --- | --- | --- | --- | --- | --- | ---
311.wupwise_l | 9200 | 399 | 369245 | 393 | 374257 | | | |
313.swim_l | 12500 | 507 | 394202 | 507 | 394202 | | | |
315.mgrid_l | 13500 | 1008 | 214301 | 1008 | 214301 | | | |
317.applu_l | 13500 | 726 | 297382 | 646 | 334258 | | | |
321.equake_l | 13000 | 2938 | 70791 | 2938 | 70791 | | | |
325.apsi_l | 10500 | 675 | 248920 | 490 | 343044 | | | |
327.gafort_l | 11000 | 714 | 246571 | 714 | 246571 | | | |
329.fma3d_l | 23500 | 1345 | 279499 | 1345 | 279499 | | | |
331.art_l | 25000 | 899 | 444961 | 880 | 454692 | | | |

Hardware

CPU: Intel Itanium 2
CPU MHz: 1500
FPU: Integrated
CPU(s) enabled: 64
CPU(s) orderable: 6 to 64 by 2
Primary Cache: L1 Inst/Data: 16 KB, associativity = 4
Secondary Cache: L2 Unified: 256 KB, associativity = 8
L3 Cache: L3 Unified: 6144 KB, associativity = 24
Other Cache: None
Memory: 256GB (512 * 512MB DIMMs)
Disk Subsystem: root disk 1x36 SCSI
Other Hardware: root disk 9x36 GB Fibrechannel (striped)

Software

OpenMP Threads: 64
Parallel: OpenMP
Operating System: HPUX11i-TCOE B.11.23
Compiler: HP C/ANSI C Compiler B.11.23
HP aC++ Compiler B.11.23
HP Fortran 90 Compiler B.11.23
HP F90 Compiler PHSS_29620
HP LIBF90 PHSS_29663
File System: vxfs
System State: Multi-user

Notes/Tuning Information

User environment:
MP_IDLE_THREADS_WAIT=-1
OMP_FIRST_USE=0

Base:
F90 +Ofast +DSitanium2 +Oopenmp +Oinfo +DD64 -minshared
cc +Ofast +Oopenmp +DD64 +Oinfo +DSitanium2
-Minshared -AOe +Ofltacc=default
submit = chatr -s +id disable +pd 64k +pi 64k $commandexe; \ _M_ARENA_OPTS=64:32 _M_SBA_OPTS=16348:150:256 \ mpsched -T FILL $command

Peak:
311.wupwise_l: +Ofast +O3 +DSitanium2 +Oopenmp
ONESTEP = true
+Oinfo +DD64 -minshared +cat -Wl, +pd64k -Wl, +pi64k
submit = chatr -s +id disable $commandexe;
_M_ARENA_OPTS=64:32 mpsched -T FILL $command

313.swim_l: basepeak=true
315.mgrid_l: basepeak=true
317.applu_l: +Ofast +DSitanium2 +Oopenmp +Oinfo
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Notes/Tuning Information (Continued)

+DD64 -minshared
ONESTEP=true
submit = chatr -s +id enable $commandexe;
   _M_ARENA_OPTS=64:32 mpsched -T FILL $command

321.equake_l: basepeak=true

325.apsi_l: +Ofaster +DSItanium2 +Oopenmp +Oinfo +DD64 -minshared
   submit = chatr -s +id disable +pd 256k +pi 256k $commandexe;
   _M_ARENA_OPTS=64:32 mpsched -T FILL $command

327.gafort_l: basepeak=true

329.fma3d_l: basepeak=true

331.art_l: +Ofaster +Oopenmp +DD64 +Oinfo +DSItanium2 -minshared -AOe +Ofltacc=default
   submit = chatr -s +id disable +pd 256k +pi 256k $commandexe;
   _M_ARENA_OPTS=64:32 _M_SBA_OPTS=16348:150:256 mpsched -T FILL $command

Alternate Sources:
ifdef version of art
   from SPEC Web site ompl2001-fabs-20030401.tar.gz
   used for Base and Peak 331.art_l

Kernel Parameters (/stand/system):
maxdsize 0xc0000000
maxdsize_64bit 0x3fffffffff
maxssiz 0x17f00000
maxssiz_64bit 0x40000000
maxtsiz 0x40000000
maxtsiz_64bit 0x40000000
vps_pagesize 4096
vps_ceiling 16384
dbc_min_pct 20
dbc_max_pct 20
swapmem_on 0

Notes:

System was configured with 1/2 of memory interleaved and
1/2 of memory local to each cell

System configured as a single partition with 16 cells and
4 processors per cell

Threads were assigned to cpus using the FILL strategy
from the HP-UX mpsched utility

Memory tuning is documented in man page malloc(3C)
   _M_ARENA_OPTS=64:32
      64 malloc arenas, 32 4k pages expansion
   _M_SBA_OPTS=16348:150:256
      16384 maxfast size, 150 small blocks, 256 grain size