OMPL2001 Result

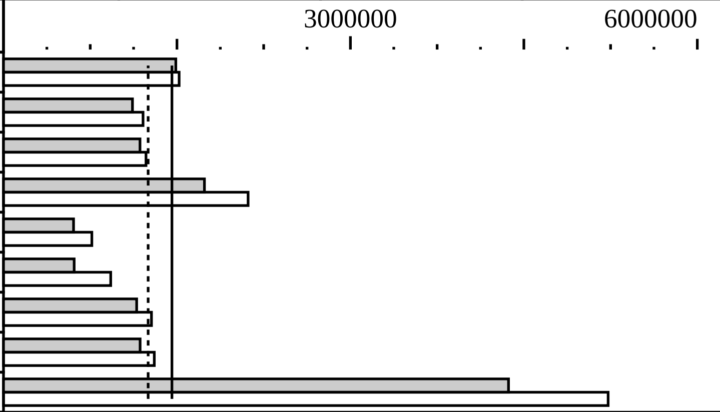
Fujitsu Limited
Fujitsu SPARC Enterprise M9000

SPECompLpeak2001 = 1456653

SPECompLbase2001 = 1250890

SPEC license #: HPG0003	Tested by: Fujitsu Limited	Test site: Sun Microsystems	Test date: Jul-2008	Hardware Avail: Jul-2008	Software Avail: Jul-2008

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	98.8	1490197	96.9	1518862
313.swim_l	12500	179	1115312	166	1206704
315.mgrid_l	13500	183	1180372	175	1232298
317.applu_l	13500	124	1737699	102	2115276
321.equake_l	13000	343	605815	272	763980
325.apsi_l	10500	275	611101	181	927142
327.gafort_l	11000	153	1151613	138	1279657
329.fma3d_l	23500	318	1181348	288	1304025
331.art_l	25000	91.6	4367179	76.5	5228717



Hardware

CPU:	SPARC64 VII
CPU MHz:	2520
FPU:	Integrated
CPU(s) enabled:	256 cores, 64 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 16 CMUs; each CMU contains 2 or 4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	1 TB (512 x 2 GB)
Disk Subsystem:	Seagate 73 GB 10000 RPM SAS
Other Hardware:	--

Software

OpenMP Threads:	192
Parallel:	OpenMP and Automatic Parallelization
Operating System:	Solaris 10 5/08 with patch 137111-03
Compiler:	Sun Studio 12 with patches 124867-06, 124861-07, 124863-05, 127000-05
File System:	UFS
System State:	Multi-User

Notes/Tuning Information

```
Compiler Invocation:
  C:    cc
  F90:  f90
  F77:  f77

Base Tuning:
  C:   -fast -xopenmp -xalias_level=std -xipo=2
       -xprefetch_level=3 -xcode=abs44 -m64 -lmtmalloc
       -g -xpagesize=4m -xprofile
  f90: -fast -openmp -xcode=abs44 -m64 -xipo=2 -autopar
       -fma=fused -g -xpagesize=4m -xprofile

  ONESTEP=yes

Extra art allowed flags:
  331.art_l:     -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8

Peak Notes:
  ONESTEP=yes

  311.wupwise_l: -fast -openmp -xunroll=4 -autopar -m64 -xcode=abs44
                 -xipo=2 -fma=fused -xpagesize=4m -xunroll=4
                 -xprofile
  313.swim_l:    -fast -openmp -m64 -xipo=2 -autopar -fma=fused
                 -xpagesize=512k -xprefetch=latx:3 -xprofile
  315.mgrid_l:   -fast -openmp -xipo=2 -xprefetch_level=3 -m64
```

Notes/Tuning Information (Continued)

```
                   -xcode=abs44 -xpagesize=512K -xprefetch=latx:4.8
                   -fma=fused -Qoption iropt -Apf:l2subblock=256
                   -xprofile
   317.applu_l:    -fast -xipo=2 -openmp -xautopar -m64 -fma=fused
                   -xpagesize=4m -xprefetch=latx:2.8
                   -Qoption iropt -Rloop_dist -xunroll=3 -xprofile
   321.equake_l:   -fast -xopenmp -xprefetch_level=3 -xpagesize=64K
                   -xprefetch=latx:2 -xipo=2 -lmtmalloc
                   -W2,-Apf:l2subblock=256 -m64 -xprofile
   325.apsi_l:     -fast -openmp -m64 -xipo=2 -autopar -fma=fused
                   -xpagesize=4m -xprefetch=latx:3.4
                   -Qoption iropt -Rloop_dist -xprofile
   327.gafort_l:   -fast -openmp -xprefetch_level=3 -m64 -fma=fused
                   -xprefetch=latx:0.5 -xprofile
   329.fma3d_l:    -fast -openmp -xcode=abs44 -m64 -xipo=2 -autopar
                   -fma=fused -g -xpagesize=4m -xprofile
   331.art_l:      -fast -xopenmp -xipo=2 -xprefetch_level=3 -m64
                   -xprefetch=latx:3 -xprofile

Alternate Source for Base and Peak:
  315.mgrid_l: intel, correct an OpenMP coding standard problem.
  Available as SPEC OMP alternative source:
    ompl2001-mgrid-20071113.tar.gz
  329.fma3d_l: sqrt.init, avoid a potential race condition.
  Available as SPEC OMP alternative source:
    ompl2001-fma3dsqrtinit-20070912.tar.gz

Alternate Source for Peak:
  325.apsi_l: ompl.dd, change initial data distribution for WORK array.
  Available as SPEC OMP alternative source:
    ompl2001-dd-20040128.tar.gz

Feedback optimization (-xprofile) is done as follows,
unless otherwise noted:
  fdo_pre0:  rm -rf ‘pwd‘/feedback.profile
  PASS1:     -xprofile=collect:./feedback
  PASS2:     -xprofile=use:./feedback

Base and Peak User Environment Settings:
  unlimit stacksize   (in /bin/csh)
  setenv SUNW_MP_PROCBIND "2 4 6 10 12 14 18 20 22 26 28 30 34 36 38
    42 44 46 50 52 54 58 60 62 66 68 70 74 76 78 82 84 86 90 92 94 98
    100 102 106 108 110 114 116 118 122 124 126 130 132 134 138 140
    142 146 148 150 154 156 158 162 164 166 170 172 174 178 180 182
    186 188 190 194 196 198 202 204 206 210 212 214 218 220 222 226
    228 230 234 236 238 242 244 246 250 252 254 258 260 262 266 268
    270 274 276 278 282 284 286 290 292 294 298 300 302 306 308 310
    314 316 318 322 324 326 330 332 334 338 340 342 346 348 350 354
    356 358 362 364 366 370 372 374 378 380 382 386 388 390 394 396
    398 402 404 406 410 412 414 418 420 422 426 428 430 434 436 438
    442 444 446 450 452 454 458 460 462 466 468 470 474 476 478 482
    484 486 490 492 494 498 500 502 506 508 510"
  setenv SUNW_MP_THR_IDLE SPIN
  setenv OMP_DYNAMIC FALSE
```

Notes/Tuning Information (Continued)

```
Additional Peak User Environment Settings:
  OMP_NUM_THREADS settings per benchmark
    311.wupwise_l    192
    313.swim_l        64
    315.mgrid_l      128
    317.applu_l      256
    321.equake_l     128
    325.apsi_l       192
    327.gafort_l     256
    329.fma3d_l      256
    331.art_l         96
  SUNW_MP_PROCBIND was set per benchmark to distribute the work to as
  many cpus and cores as possible.  See config file for details.

For a description of Sun Studio 12 Compiler flags, portability flags
and system parameters used to generate this result, please refer to
SUN-20080714-Studio-Solaris-sparc.txt file in the flags directory.

This result was measured on Sun SPARC Enterprise M9000.
The Sun SPARC Enterprise M9000 and the Fujitsu SPARC Enterprise
M9000 are electrically equivalent.
"CMU" = CPU/Memory Unit; each holds 2 or 4 CPU chips.
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