



# OMPL2001 Result

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## Sun Microsystems Sun SPARC Enterprise M8000

SPECompLpeak2001 = 581807  
SPECompLbase2001 = 532576

SPEC license #HPG0010 | Tested by: Sun Microsystems | 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	241	611949	221	664612
313.swim_l	12500	548	364887	546	366251
315.mgrid_l	13500	349	618105	349	619202
317.applu_l	13500	661	326864	653	330642
321.quake_l	13000	454	457725	450	461973
325.apsi_l	10500	531	316289	271	618806
327.gafort_l	11000	430	409094	426	413491
329.fma3d_l	23500	726	517805	716	525312
331.art_l	25000	161	2491462	162	2468435

Hardware	Software
CPU: SPARC64 VII CPU MHz: 2520 FPU: Integrated CPU(s) enabled: 64 cores, 16 chips, 4 cores/chip, 2 threads/core CPU(s) orderable: 1 to 4 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: 256 GB (128 x 2 GB) Disk Subsystem: Seagate 73 GB 10000 RPM SAS Other Hardware: --	OpenMP Threads: 64 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

### Base Notes:

```
C: -fast -xopenmp -xalias_level=std -xipo=2
    -xprefetch_level=3 -xcode=abs44 -m64 -lmtmalloc
    -g -xpagesize=4m -Xc -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=512k
               -Qoption iropt -Athr,-Apf:l2subblock=256,-Apf:ipa=9
               -xprefetch=latx:3 -Qoption iropt -Rloop_dist
               -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 -xcode=abs44 -xpagesize=512k -xprefetch=latx:4.8
```



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## Notes/Tuning Information (Continued)

```

317.applu_1: -Qoption iropt -Apf:l2subblock=256 -xprofile
             -fast -xipo=2 -openmp -xautopar -m64
             -fma=fused -xpagesize=4m -xprefetch=latx:2.8
321.quake_1: -Qoption iropt -Rloop_dist -xunroll=3 -xprofile
             -fast -xopenmp -xprefetch_level=3 -xpagesize=64K
             -xprefetch=latx:2 -xipo=2 -lmtmalloc
             -W2,-Apf:l2subblock=256 -m64 -xprofile
325.apsi_1:  -fast -openmp -m64 -xipo=2 -autopar -fma=fused
             -xpagesize=4m -xprefetch=latx:3.4
             -Qoption iropt -Rloop_dist -xprofile
327.gafort_1: -fast -openmp -xcode=abs44 -m64 -xipo=2
             -autopar -fma=fused -xpagesize=512k -xprofile
329.fma3d_1: -fast -openmp -autopar -xipo=2 -fma=fused -m64
             -unroll=6 -xprefetch=latx:4 -xpagesize=4m
             -xprofile
331.art_1:   -fast -xopenmp -xipo=2 -xprefetch_level=3 -m64
             -xprefetch=latx:3 -xprofile

```

Alternate Source for Base and Peak:

315.mgrid\_1: intel, correct an OpenMP coding standard problem.

Available as SPEC OMP alternative source:

ompl2001-mgrid-20071113.tar.gz

329.fam3d\_1: sqrt.init, avoid a potential race condition.

Available as SPEC OMP alternative source:

ompl2001-fma3dsqrtinit-20070912.tar.gz

Alternate Source for Peak:

325.apsi\_1: 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 " 1 2 4 6 8 10 12 14
16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46
48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78
80 82 84 86 88 90 92 94 96 98 100 102 104 106 108
110 112 114 116 118 120 122 124 126 "
setenv SUNW_MP_THR_IDLE SPIN
setenv OMP_DYNAMIC FALSE

```

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 M8000.

The Sun SPARC Enterprise M8000 and the Fujitsu SPARC Enterprise  
M8000 are electrically equivalent.

"CMU" = CPU/Memory Unit; each holds 2 or 4 CPU chips.



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