



OMPM2001 Result

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Sun Microsystems
Sun SPARC Enterprise M8000 Server

SPECompMpeak2001 = 66283

SPECompMbase2001 = 59179

SPEC license #HPG0010 | Tested by: Sun Microsystems | Test site: | Test date: Apr-2007 | Hardware Avail: Apr-2007 | Software Avail: Jul-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	73.3	81842	56.1	106882	
312.swim_m	6000	86.3	69546	86.3	69546	
314.mgrid_m	7300	103	70828	95.4	76552	
316.applu_m	4000	32.9	121617	32.9	121617	
318.galgel_m	5100	240	21271	153	33254	
320.earthquake_m	2600	59.9	43377	51.1	50890	
324.apsi_m	3400	41.6	81673	41.6	81673	
326.gafort_m	8700	137	63301	137	63301	
328.fma3d_m	4600	118	39047	104	44189	
330.art_m	6400	27.9	229194	27.8	229814	
332.ammp_m	7000	470	14896	397	17646	

Hardware

CPU: SPARC64 VI
 CPU MHz: 2280
 FPU: Integrated
 CPU(s) enabled: 32 cores, 16 chips, 2 cores/chip
 CPU(s) orderable: 1 to 4 CMUs; each CMU contains 2 or 4 chips
 Primary Cache: 128 KB I + 128 KB D on chip per core
 Secondary Cache: 5 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 256 GB (128 x 2 GB)
 Disk Subsystem: 673 GB RAID 1+0 created by Solaris Volume Manager with 20 x 73 GB 10,000 RPM Fujitsu MAY2073RC SAS
 Other Hardware: --

Software

OpenMP Threads: 32
 Parallel: OpenMP and Autoparallel
 Operating System: Solaris 10 7/07
 Compiler: Sun Studio 12
 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 -Xc
 -xprefetch_level=3 -m64 -lmtmalloc
 -xpagesize=4m -xprofile

Fortran: -fast -openmp -m64 -xipo=2 -autopar
 -fma=fused -xpagesize=4m -xprofile

ONESTEP=yes

Peak Tuning:

ONESTEP=yes

310.wupwise_m: -fast -openmp -autopar -m32 -xipo=2 -fma=fused
 -xpagesize=512k -xprefetch_level=3
 -Qoption iropt -Athr, -Apf:l2subblock=256, -Apf:ipa=9
 -xprofile



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Notes/Tuning Information (Continued)

```

312.swim_m:      basepeak=yes
314.mgrid_m:    -fast -openmp -xipo=2 -xprefetch_level=3
                -Qoption iropt -Apf:l2subblock=256 -m32 -xpagesize=4m
                -fma=fused -xprefetch=latx:4 -xprofile
316.applu_m:    basepeak=yes
318.galgel_m:   -fast -xipo=2 -openmp -autopar -m32 -fma=fused
                -xlic_lib=sunperf
                RM_SOURCES=lapak.f90
                -xalias_level=strong -xprefetch_level=3 -lmtmalloc
320.quake_m:   -fast -xopenmp -xipo=2 -xrestrict
                -m32 -xpagesize=64k -W2,-Apf:l2subblock=256
                -xprofile
324.apsi_m:    basepeak=yes
326.gafort_m:  basepeak=yes
328.fma3d_m:   -fast -openmp -Qoption iropt -Athr,-Apf:pdl=1
                -Qoption cg -Qlp-ip=1 -xipo=2 -xprefetch_level=3
                -lmtmalloc -fma=fused -m32 -xprofile
                Alternative src ompl.32 was used
330.art_m:     -fast -xopenmp -xalias_level=std -xipo=2
                -xprefetch_level=3 -W2,-Apf:outer=0:pdl=1
                -Wc,-Qlp-ip=1 -lmtmalloc -m64 -xprofile
332.ammp_m:   -fast -xopenmp -xalias_level=strong
                -xprefetch_level=3 -lmopt -lm -lmtmalloc -m32
                -xprofile
                SUNW_MP_GUIDED_SCHED_WEIGHT=2

```

Portability flags:

318.galgel_m: -e -fixed

Extra art allowed flags:

330.art_m: -DINTS_PER_CACHELINE=16 -DBLS_PER_CACHELINE=8

Alternate Source for Peak:

Approved alternate source ompl.32 was used for 328.fma3d_m

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:

```

unlimit stacksize (in /bin/csh)
setenv STACKSIZE 16384
setenv OMP_NUM_THREADS 32
setenv OMP_DYNAMIC FALSE
setenv SUNW_MP_PROCBIND "0 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 "
setenv SUNW_MP_THR_IDLE SPIN

```

Kernel Paramters (/etc/system):

```

set autoup=900
set tune_t_fsflushr=5

```

System configuration details located at



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Notes/Tuning Information (Continued)

<http://www.sun.com/servers/>

For a description of Sun Studio 12 Compiler flags, portability flags and system parameters used to generate this result, please refer to SUN-20070503-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.