



OMPM2001 Result

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Sun Microsystems Sun Fire V890 (8 processor)

SPECompMpeak2001 = 14789

SPECompMbase2001 = 12958

SPEC license #HPG0010 | Tested by: Sun Microsystems | Test site: Sun Microsystems | Test date: Aug-2004 | Hardware Avail: Sep-2004 | Software Avail: Sep-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	362	16570	346	17334	
312.swim_m	6000	671	8944	383	15683	
314.mgrid_m	7300	631	11565	646	11301	
316.applu_m	4000	198	20222	186	21514	
318.galgel_m	5100	504	10116	285	17867	
320.earthquake_m	2600	230	11311	213	12191	
324.apsi_m	3400	251	13547	253	13458	
326.gafort_m	8700	707	12304	707	12314	
328.fma3d_m	4600	568	8100	477	9647	
330.art_m	6400	159	40182	159	40210	
332.ammp_m	7000	871	8034	875	8001	

Hardware

CPU: Sun UltraSPARC IV
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip
 CPU(s) orderable: 4,8 (order by # of chips)
 Primary Cache: 32KBI+64KBD per core on chip (64KBI+128KB on chip)
 Secondary Cache: 8MB(I+D) per core off chip (16MB(I+D) off chip)
 L3 Cache: None
 Other Cache: None
 Memory: 32GB 8-way interleaved
 Disk Subsystem: 1x73GB
 Other Hardware: --

Software

OpenMP Threads: 16
 Parallel: OpenMP + Auto Parallel
 Operating System: Solaris 9 9/04
 Compiler: Sun Studio 9
 File System: ufs with ufs logging
 System State: Multi-User

Notes/Tuning Information

Base Flags and Notes:

ONESTEP=yes for all benchmarks

C: -fast -xopenmp -xalias_level=std -xipo=2
 -xprefetch_level=3
 -xprofile -lmtmalloc

f90: -fast -autopar -openmp -xipo=2
 -xprefetch_level=3 -xprofile

Portability and Extra flags:

318.galgel_m: -e -fixed

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

Peak Flags and Notes:

ONESTEP=yes for all benchmarks

310.wupwise_m: -fast -openmp -autopar -xipo=2
 -Qoption iropt -Athr,
 -Ainline:inc=800:cp=1 -xprefetch_level=3
 -xunroll=2 -xpagesize=512k -xprofile

312.swim_m: -fast -xautopar -xreduction



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Notes/Tuning Information (Continued)

```

-Qoption iropt -Ainline:cs=700,
-Atile:skewp:b256 -xpad=common:3022
-xprefetch=latx:1.6 -lmtmalloc
314.mgrid_m: -fast -autopar -xreduction -xipo=2
-xprefetch_level=3 -xprefetch=latx:2
-Qoption iropt -Apf:largedim -xpagesize=64k
-xchip=ultra3 -xarch=v8plusa
316.applu_m: -fast -openmp -xipo=2
-Qoption iropt -Aujam:inner=g
-xunroll=1 -xprefetch=latx:1.8 -xprofile
srcalt = omp1.32
318.galgel_m: -fast -xipo=2 -openmp -autopar
-xlic_lib=sunperf -xarch=v8plusb
RM_SOURCES=lapak.f90
STACKSIZE = 16384
320.quake_m: -fast -xipo=2 -xopenmp -xrestrict
-xalias_level=strong -xprefetch_level=3
-W2,-Apf:pdl=1 -Wc,-Qlp-ip=1-ol=1
-xpagesize=64k
-xprofile -lmtmalloc -lmopt -lm
srcalt = omp1.32
324.apsi_m: -fast -openmp -autopar -xipo=2
-xpagesize=8k -xprofile
srcalt = omp1.32
326.gafort_m: -fast -openmp -xprofile
srcalt = omp1.32
328.fma3d_m: -fast -openmp -Qoption iropt -Athr,
-Apf:pdl=1 -Qoption cg -Qlp-ip=1
-xipo=2 -xprefetch_level=3 -xprofile
-lmtmalloc
srcalt = omp1.32
330.art_m: -fast -xopenmp -xalias_level=std -xipo=2
-xprefetch_level=3 -W2,-Apf:outer=0:pdl=1
-Wc,-Qlp-ip=1 -xprofile -lmtmalloc
srcalt = omp1.32
332.ammp_m: -fast -xopenmp -xalias_level=strong
-xprefetch_level=3 -lmopt -lm -lmtmalloc

```

Alternate Source:

330.art_m: ompm-purdue1-20040324.tar

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:

```

SUNW_MP_GUIDED_SCHED_WEIGHT=2
setenv STACKSIZE 2048
setenv OMP_NUM_THREADS 16
setenv OMP_DYNAMIC FALSE
setenv SUNW_MP_PROCBIND "0 8 1 9 2 10 3 11 4 12 5 13
6 14 7 15

```

setenv MPSSSTACK 4M



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Notes/Tuning Information (Continued)

```
setenv MPSSHEAP 4M
setenv LD_PRELOAD mpss.so.1
ulimit -s 524288
```

```
Kernel Parameters (/etc/system):
set autoup=900
set tune_t_fsflushr=1
```