



OMPM2001 Result

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Sun Microsystems
Sun Fire E2900 (12 processor)

SPECompMpeak2001 = 16513

SPECompMbase2001 = 13966

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	286	20961	273	21991	
312.swim_m	6000	692	8666	340	17627	
314.mgrid_m	7300	678	10764	678	10764	
316.applu_m	4000	164	24444	155	25741	
318.galgel_m	5100	528	9651	322	15850	
320.earthquake_m	2600	249	10425	191	13586	
324.apsi_m	3400	219	15521	206	16467	
326.gafort_m	8700	668	13020	662	13133	
328.fma3d_m	4600	467	9843	381	12081	
330.art_m	6400	152	42209	152	42211	
332.ammp_m	7000	717	9762	717	9762	

Hardware

CPU: Sun UltraSPARC IV
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 24 cores, 12 chips, 2 cores/chip
 CPU(s) orderable: 4,8,12 (order by # of chips)
 Primary Cache: 32KBI+64KBD per core on chip (64KBI+128KBD on chip)
 Secondary Cache: 8MB(I+D) per core off chip (16MB(I+D) off chip)
 L3 Cache: None
 Other Cache: None
 Memory: 96GB 16-way interleaved
 Disk Subsystem: 1X73GB
 Other Hardware: --

Software

OpenMP Threads: 24
 Parallel: OpenMP + Auto Parallel
 Operating System: Solaris 9 4/04
 Compiler: Sun Studio 9
 File System: ufs
 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

SUNW_MP_GUIDED_SCHED_WEIGHT=2

Portability and Extra flags:

318.galgel_m: -e -fixed
 330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE

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:b368 -xpad=common:3022
-xprefetch=latx:1.6 -lmtmalloc
314.mgrid_m: basepeak = yes
316.applu_m: -fast -openmp -xipo=2
-Qoption iropt -Aujam:inner=g
-xunroll=1 -xprefetch=latx:1.8 -xprofile
srcalt = ompl.32
318.galgel_m: -fast -xipo=2 -openmp -autopar
-xlic_lib=sunperf -xarch=v8plusb
RM_SOURCES=lapak.f90
ENV_OMP_NUM_THREADS = 18
STACKSIZE = 16384
ENV_SUNW_MP_GUIDED_SCHED_WEIGHT=3
320.equake_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 = ompl.32
324.apsi_m: -fast -openmp -autopar -xipo=2
-xpagesize=8k -xprofile
srcalt = ompl.32
326.gafort_m: -fast -openmp -xprofile
srcalt = ompl.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 = ompl.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 = purduel
332.ammp_m: basepeak= yes

```

Alternate Source:

```

330.art_m: ompm-purduel-20040324.tar
316.applu_m, 320.equake_m, 324.apsi_m, 326.gafort_m,
328.fma3d_m : ompm2001-srcl32bit-20020925.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:

```

setenv STACKSIZE 2048
setenv OMP_NUM_THREADS 24
setenv OMP_DYNAMIC FALSE
setenv SUNW_MP_PROCBIND "0 12 1 13 2 14 3 15 4
16 5 17 6 18 7 19 8 20 9 21 10 22 11 23"
setenv MPSSSTACK 4M
setenv MPSSHEAP 4M
setenv LD_PRELOAD mpss.so.1

```



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Notes/Tuning Information (Continued)

```
ulimit -s 524288
```

Kernel Parameters (/etc/system):

```
set autoup=900
```

```
set tune_t_fsflushr=1
```

System configuration details located at

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