



OMPM2001 Result

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Sun Microsystems
Sun Fire 6800

SPECompMpeak2001 = 15630

SPECompMbase2001 = 13332

SPEC license #HPG0010 | Tested by: Sun Microsystems, Palo Alto | Test site: Sun Microsystems | Test date: Mar-2003 | Hardware Avail: Mar-2003 | Software Avail: May-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	283	21210	271	22172	
312.swim_m	6000	649	9251	365	16431	
314.mgrid_m	7300	567	12874	562	12997	
316.applu_m	4000	153	26165	152	26300	
318.galgel_m	5100	511	9984	315	16212	
320.earthquake_m	2600	244	10645	180	14472	
324.apsi_m	3400	276	12337	236	14424	
326.gafort_m	8700	777	11197	761	11435	
328.fma3d_m	4600	485	9480	415	11073	
330.art_m	6400	205	31197	206	31081	
332.ammp_m	7000	850	8240	854	8201	

Hardware

CPU: UltraSPARC III Cu
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 24
 CPU(s) orderable: 2-24
 Primary Cache: 32KBI+64KBD on chip
 Secondary Cache: 8MB(I+D) off chip
 L3 Cache: None
 Other Cache: None
 Memory: 48GB 16-way interleaved
 Disk Subsystem: 1X36GB
 550GB (4 9X18GB Sun StorEdge T3 arrays)
 Other Hardware: --

Software

OpenMP Threads: 24
 Parallel: OpenMP
 Operating System: Solaris 9 12/02
 Compiler: Sun ONE Studio 8 (pre-FCS build 3/9)
 Sun Performance Library 8 (pre-FCS build 3/9)
 File System: ufs with ufs logging
 System State: Multi-User

Notes/Tuning Information

Base Flags:

ONESTEP=yes for all benchmarks

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

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

Extra art Base Flags:

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

Portability Flags:

318.galgel_m: -e -fixed

Peak Flags:

ONESTEP=yes for all benchmarks

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

312.swim_m: -fast -xautopar -xreduction -Qoption iropt
 -Ainline:cs=700,-Atile:skewp:b384 -xpad=common:3022



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Notes/Tuning Information (Continued)

```

-xprefetch=latx:1.6
314.mgrid_m: -fast -autopar -openmp -xipo=2 -xprefetch_level=3
              -xpagesize=64k
316.applu_m:  -fast -openmp -xipo=2 -Qoption iropt -Aujam:inner=g
318.galgel_m: -fast -xipo=2 -openmp -autopar -xarch=v8plusb
              -xlic_lib=sunperf
320.quake_m:  -fast -xopenmp -xrestrict -xalias_level=strong
              -W2,-Ainline:call_in_pragma -xpagesize=64k
              -xprefetch_level=3 -xprofile -lmtmalloc -lmopt -lm
324.apsi_m:   -fast -autopar -openmp -xipo=2 -xprofile
326.gafort_m: -fast -openmp -xprofile
328.fma3d_m:  -fast -openmp -Qoption iropt -Athr,-Apf:pdl=1
              -xipo=2 -xprofile -lmtmalloc
330.art_m:    -fast -xopenmp -xalias_level=std -xipo=2
              -xprefetch_level=3 -W2,-Apf:outer=0 -xprofile
              -lmtmalloc
332.ammp_m:   -fast -xopenmp -xalias_level=strong
              -xprefetch_level=3 -lmopt -lm -lmtmalloc

```

Alternate Source for Base:

ISO C and C++ compatible sources
 Available as SPEC OMP Source: ompm2001-isoc-20020619.tar.gz
 320.quake_m, 330.art_m, 332.ammp_m

Alternate Source for Peak:

Compatibility with LAPACK version 3, RM_SOURCES=lapak.f90
 Available as SPEC OMP Source: ompm2001-galgel-20020117.tar.gz
 318.galgel_m

SPEC OMPL2001 compatible source for 64-bit systems

Available as SPEC OMP Source: ompm2001-ompl64-20020925.tar.gz
 320.quake_m, 324.apsi_m, 326.gafort_m

ISO C and C++ compatible sources

Available as SPEC OMP Source: ompm2001-isoc-20020619.tar.gz
 330.art_m

Feedback is done as follows, unless otherwise noted:

```

fdo_pre0:  rm -rf ./feedback.profile ./SunWS_cache
PASS1:     -xprofile=collect:./feedback
PASS2:     -xprofile=use:./feedback

```

Base User Environment:

```

limit stacksize 512k (in /bin/csh)
setenv STACKSIZE 2048
setenv OMP_DYNAMIC FALSE
setenv MT_BIND_PROCESSOR TRUE
setenv MPSSSTACK 4M
setenv MPSSHEAP 4M
setenv LD_PRELOAD mpss.so.1

```

Peak User Environment:

Same as base with the following exception
 318.galgel: STACKSIZE=16384; ENV_OMP_NUM_THREADS = 18
 324.apsi: unlimited stacksize
 326.gafort: limit stacksize 128m



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Notes/Tuning Information (Continued)

```
328.fma3d:  unlimit stacksize
330.art:    limit stacksize 8m
```

```
Kernel Paramters (/etc/system):
set autoup=900
set tune_t_fsflushr=1
set shmsys:shminfo_shmmax=0xffffffffffffffff
set shmsys:shminfo_shmseg=512
set shmsys:shminfo_shmmni=4096
```

Sun ONE Studio 8 (FCS) will ship May 2003

System configuration details located (as of Mar 2003) at
<http://www.sun.com/servers/midrange/sunfire6800>