# OMPM2001 Result

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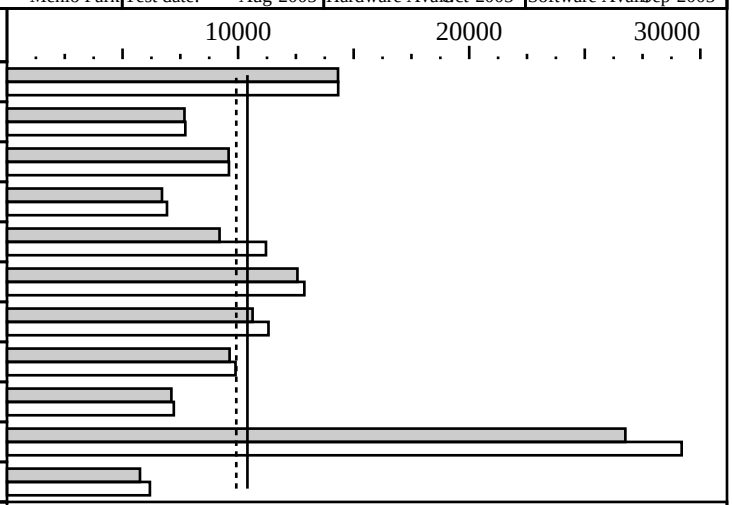
## Sun Microsystems
## Sun Fire X4200

SPECompMpeak2001 = 10403

SPECompMbase2001 = 9921

| SPEC license #1 | HPG0010 | Tested by: | Sun Microsystems, Santa Clara | Test site: | Menlo Park | Test date: | Aug-2005 | Hardware Avail | Oct-2005 | Software Avail | Sep-2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Benchmark | Reference Time | Base Runtime | Base Ratio | Peak Runtime | Peak Ratio |
|---|---|---|---|---|---|
| 310.wupwise_m | 6000 | 419 | 14323 | 419 | 14330 |
| 312.swim_m | 6000 | 781 | 7679 | 778 | 7716 |
| 314.mgrid_m | 7300 | 761 | 9589 | 760 | 9604 |
| 316.applu_m | 4000 | 596 | 6706 | 578 | 6923 |
| 318.galgel_m | 5100 | 555 | 9197 | 455 | 11206 |
| 320.equake_m | 2600 | 207 | 12567 | 202 | 12867 |
| 324.apsi_m | 3400 | 320 | 10626 | 300 | 11315 |
| 326.gafort_m | 8700 | 903 | 9632 | 880 | 9888 |
| 328.fma3d_m | 4600 | 647 | 7113 | 637 | 7218 |
| 330.art_m | 6400 | 239 | 26756 | 219 | 29192 |
| 332.ammp_m | 7000 | 1216 | 5754 | 1132 | 6183 |




### Hardware

| | |
|---|---|
| CPU: | AMD Opteron (TM) 280 |
| CPU MHz: | 2400 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 (order by # of chips) |
| Primary Cache: | 64KBI + 64KBD (on chip) per core |
| Secondary Cache: | 1024KB (I+D) (on chip) per core |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16GB (8x2GB, PC3200 CL3 DDR SDRAM ECC Registered) |
| Disk Subsystem: | SAS, 36GB, 10K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| OpenMP Threads: | 4 |
| Parallel: | OpenMP |
| Operating System: | Solaris 10 3/05 HW1 |
| Compiler: | Sun Studio 10<br>with Patch-02 patches |
| File System: | ufs |
| System State: | Multi-User |

## Notes/Tuning Information

```
*****************************************************************
*vvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvvv*
     This config uses the -xalias_level=strong flag for "base"
     and is in violation of run rule 2.2.4.  It is unacceptable
     as a base flag for future submissions.  This submission was
     accepted prior to this rule clarification and it has been
     established that any variation in performance due to this
     flag was within the range of tolerance for reproducibility.
*^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^*
*****************************************************************

 Compiler Invocation:
   C   : cc
   F90 : f90
   F77 : f90

 Base tuning:
   Fortran : -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 -xvector=simd -xopenmp
   C       : -fast -Xc -xipo=2 -xalias_level=strong -xarch=amd64 -xopenmp
   ONESTEP=yes

 +FDO:  PASS1= -xprofile=collect:./feedback PASS2= -xprofile=use:./feedback
```

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## Notes/Tuning Information (Continued)

```
+MPSS mean setting the following environment variables:
  ENV_MPSSHEAP=2m
  ENV_MPSSSTACK=2m
  ENV_LD_PRELOAD=mpss.so.1


Peak tuning:
 ONESTEP=yes for all peak tests.

 310.wupwise_m   : -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 -xvector=simd -xopenmp
 312.swim_m      : -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 -xvector=simd -xopenmp
 314.mgrid_m     : -fast -xipo=2 -xprefetch_level=3 -xarch=amd64 -xopenmp
 316.applu_m     : -fast -xipo=2 -xprefetch_level=3 -xarch=amd64
                   -Qoption iropt -Aujam:inner=g -xopenmp +MPSS
 318.galgel_m    : -fast -xipo=2 -qoption iropt -xprefetch_level=3 -xvector=simd
                   -xarch=amd64 -xopenmp -xlic_lib=sunperf +FDO +MPSS
                   RM_SOURCES=lapak.f90
 320.equake_m    : -fast -xipo=2 -xalias_level=strong  -xarch=amd64 -xopenmp
 324.apsi_m      : -fast -xipo=2 -xprefetch_level=3  -xopenmp
 326.gafort_m    : -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 -xvector=simd
                 :  -xopenmp +MPSS
 328.fma3d_m     : -fast -xipo=2 -xprefetch_level=3 -xarch=amd64 -xopenmp +FDO +MPSS
 330.art_m       : -fast -xcrossfile -xarch=amd64 -xalias_level=std -xopenmp
                   -lmtmalloc -lm +MPSS
 332.ammp_m      : -fast -xipo=2 -xarch=amd64 -xalias_level=std -xopenmp -lmopt -lm +MPSS

Portablility flags:
      318.galgel_m      : -e -fixed
      330.art_m         : Extra Flag: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8

Alternate Source:
      330.art_m         : Required srcalt purdue1 used for base and peak
      310.wupwise_m     : Approved srcalt ompl.32 used for peak
      312.swim_m        : Approved srcalt ompl.32 used for peak
      314.mgrid_m       : Approved srcalt ompl    used for peak
      320.equake_m      : Approved srcalt ompl.32 used for peak
      324.apsi_m        : Approved srcalt ompl    used for peak

Base and Peak User Environment:
  export OMP_NUM_THREADS=4
  export SUNW_MP_PROCBIND=TRUE
  export SUNW_MP_THR_IDLE=SPIN
  export OMP_NESTED=FALSE
  export STACKSIZE=16384
  export OMP_DYNAMIC=TRUE
  ulimit -s unlimited

Patch-02 includes the following patches for Sun Studio 10 compiler,
these can be downloaded from (as of 04/21/2005)
http://developers.sun.com/prodtech/cc/downloads/patches/ss10_patches.html
117831-02 C++
117837-02 C
117845-01 Debugger
117846-02 x86/x64 backend (codegen)

For a description of Sun Studio 10 Compiler flags, portability flags
```

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|---|---|---|---|---|---|---|---|---|---|---|---|

## Notes/Tuning Information (Continued)

and system parameters used to generate this result, please refer to
SUN-20050330-Studio-Solaris-opteron.txt file in the flags directory.

Default BIOS settings used.