



OMPM2001 Result

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Sun Microsystems
Sun Blade X8440

SPECompMpeak2001 = 24246

SPECompMbase2001 = 22921

SPEC license #HPG0010 | Tested by: Sun Microsystems, Santa Clara | Test site: Menlo Park | Test date: Aug-2007 | Hardware Available: Sep-2007 | Software Available: Aug-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	173	34737	169	35585	
312.swim_m	6000	266	22585	260	23117	
314.mgrid_m	7300	332	22021	323	22609	
316.applu_m	4000	288	13899	282	14174	
318.galgel_m	5100	379	13442	336	15156	
320.quake_m	2600	92.6	28083	86.1	30198	
324.apsi_m	3400	124	27427	114	29707	
326.gafort_m	8700	417	20888	387	22485	
328.fma3d_m	4600	261	17623	239	19275	
330.art_m	6400	78.3	81685	80.2	79765	
332.ammp_m	7000	570	12271	510	13737	

Hardware

CPU: AMD Opteron 8222
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 2, 4 chips
 Primary Cache: 64 KB I + 64 KB D (on chip) per core
 Secondary Cache: 1024 KB (I+D) (on chip) per core
 L3 Cache: None
 Other Cache: None
 Memory: 64 GB (16x4GB, DDR2-667 CL5 ECC Registered)
 Disk Subsystem: SCSI, 72 GB, 10K RPM
 Other Hardware: None

Software

OpenMP Threads: 8
 Parallel: OpenMP
 Operating System: Solaris 10 11/06
 Compiler: Sun Studio 12 with Patches
 File System: ufs
 System State: Multi-User

Notes/Tuning Information

Compiler Invocation:

```
C : cc
F90 : f90
F77 : f90
```

Base tuning:

```
Fortran : -fast -xipo=2 -m64 -xarch=sse2a -xprefetch_level=3 -xvector=simd -xopenmp
C : -fast -xipo=2 -m64 -xarch=sse2a -xopenmp
ONESTEP=yes
```

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

Peak tuning:

```
ONESTEP=yes for all peak tests.
```

```
310.wupwise_m : -fast -Ooption ube -sched_first_pass=1 -xipo=2 -xarch=amd64
               -xprefetch_level=3 -xvector=simd -xopenmp -lmvec
312.swim_m : -fast -Ooption ube -fsimple=3 -xipo=2 -m64 -xarch=sse2a
             -xprefetch_level=3 -xvector=simd -xopenmp -lmvec
             used ompl.32 src.alt
314.mgrid_m : -fast -Ooption ube -sched_first_pass=1 -xipo=2 -xarch=amd64
               -xprefetch_level=3 -xvector=simd -xopenmp -lmvec
316.applu_m : -fast -xipo=2 -Ooption f90comp -hoist_expensive,-hoist_trivial -m64
```



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Notes/Tuning Information (Continued)

```

-xarch=sse2a -xprefetch_level=3 -xvector -xopenmp -lmtmalloc
used ompl.32 src.alt
318.galgel_m : -fast -xpagesize=2m -xipo=2 -qoption iropt -xprefetch_level=3 -xvector=simd
-xarch=amd64 -xopenmp -xlic_lib=sunperf +FDO
RM_SOURCES=lapak.f90
320.equake_m : -fast -Wu,-sched_first_pass=1 -xipo=2
-xarch=amd64 -xopenmp -lmvec
used ompl.32 src.alt
324.apsi_m : -fast -xipo=2 -Qoption f90comp -hoist_expensive,-hoist_trivial
-xarch=amd64a -xprefetch_level=3 -xvector -xopenmp -lmtmalloc
used ompl.32 src.alt
326.gafort_m : -fast -Qoption ube -sched_first_pass=1 -xpagesize=2m -xipo=2
-xarch=amd64 -xprefetch_level=3 -xvector=simd -lmvec
328.fma3d_m : -fast -xipo=2 -m64 -xarch=sse2a -xprefetch_level=3
-xvector=simd -xopenmp
used ompl.32 src.alt
330.art_m : -fast -xpagesize=2m -xipo=2 -xarch=amd64 -xalias_level=std -xopenmp
-lmtmalloc -lm
332.amp_m : -fast -Wu,-sched_first_pass=1 -xpagesize=2m -xipo=2 -m64
-xarch=sse2a -xalias_level=std -xopenmp -lmopt -lm

```

Portability flags:

318.galgel_m : -e -fixed

Extra art allowed flags:

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

Base and Peak User Environment:

```

export OMP_NUM_THREADS=8
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

```

Sun Studio 12 Patches Installed:

```

+ Sun Studio 12 Compilers and Tools
  124864, 124868, 124869, 124873, 124876, 126496, 126498, 126504, 126996,
  127002, 127003, 127144, 127153
+ Solaris 10
  119964, 120754, 118677, 119961, 119255

```

+ Details on these Sun Studio 12 Patches can be found at:

http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp

For a description of Sun Studio 10 Compiler flags, portability flags and system parameters used to generate this result, please refer to SUN-20070711-Studio-Solaris-opteron.txt file in the flags directory.

Default BIOS settings used.