



OMPM2001 Result

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Oracle Corporation
Sun Fire X2270 M2

SPECompMpeak2001 = 55178
SPECompMbase2001 = 49548

SPEC license #HPG0010 | Tested by: Oracle Corporation | Test site: Menlo Park | Test date: Mar-2010 | Hardware Avail: May-2010 | Software Avail: Oct-2009

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	79.2	75760	79.4	75561
312.swim_m	6000	160	37460	150	39970
314.mgrid_m	7300	154	47476	148	49447
316.applu_m	4000	123	32510	123	32534
318.galgel_m	5100	141	36131	98.1	51969
320.earthquake_m	2600	59.9	43395	47.0	55313
324.apsi_m	3400	77.5	43843	62.4	54453
326.gafort_m	8700	145	60002	145	59897
328.fma3d_m	4600	110	41942	102	45235
330.art_m	6400	45.5	140702	37.8	169372
332.ammp_m	7000	169	41441	169	41364

Hardware

CPU: Intel Xeon X5670
 CPU MHz: 2933
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB (6 x 4 GB DDR3-1333 CL9, 2 Rank, ECC)
 Disk Subsystem: 1 x 1 TB, SATA, 7200 RPM
 Other Hardware: None

Software

OpenMP Threads: 24
 Parallel: OpenMP and Automatic parallel
 Operating System: Oracle Solaris 10 10/09
 Compiler: Oracle Solaris Studio 12 Update 1
 File System: zfs
 System State: Multi-User

Notes/Tuning Information

Compiler Invocation:

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

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

Base tuning:

```
Fortran : -fast -xtarget=nehalem -xarch=generic -xipo=2 -xopenmp
          -xautopar -xvector=lib -m64 -lmtmalloc +FDO
C : -fast -xtarget=nehalem -fns=no -xdepend=no -m64 -xopenmp
    -lmvec +FDO
ONESTEP=yes
```

Peak tuning:

ONESTEP=yes for all peak tests.

```
310.wupwise_m : -fast -xtarget=nehalem -xarch=generic -xautopar -xopenmp
                -xipo=2 -xvector=lib -xprefetch -xprefetch_level=3 -m64
                -lmtmalloc +FDO
                SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                OMP_NUM_THREADS=12
```



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Notes/Tuning Information (Continued)

```

312.swim_m      : -fast -xtarget=nehalem -xmodel=medium
                  -Qoption ube -fsimple=3 -xipo=2 -m64 -xvector=simd
                  -xopenmp -lmvec +FDO
                  srcalt = omp1.32
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
314.mgrid_m     : -fast -xtarget=nehalem -xopenmp -xautopar -xipo=2
                  -xvector=lib -xprefetch -xprefetch_level=3 -m64
                  -lmtmalloc +FDO
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
316.applu_m    : -fast -xtarget=nehalem -xarch=generic -xipo=2
                  -xmodel=medium -xopenmp -xautopar -xvector=lib
                  -m64 -aligncommon=16 -fns=no -lmtmalloc +FDO
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
318.galgel_m   : -O3 -xtarget=nehalem -xpagesize=2M -xipo=2
                  -xvector=simd -m64 -xopenmp -xlic_lib=sunperf +FDO
                  RM_SOURCES=lapak.f90
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
320.quake_m    : -fast -xtarget=nehalem -fns=no -xalias_level=layout
                  -xdepend=no -m64 -xopenmp -lmvec +FDO
                  srcalt = omp1.32
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
324.apsi_m     : -fast -xtarget=nehalem -xipo=2 -m64 -xprefetch_level=3
                  -xvector -xopenmp -lmtmalloc +FDO
                  srcalt = omp1.32
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
326.gafort_m   : -fast -xtarget=nehalem -xarch=generic -xipo=2 -xopenmp
                  -xautopar -xvector=lib -m64 -aligncommon=16 -fns=no
                  -lmtmalloc +FDO
328.fma3d_m    : -fast -xtarget=nehalem -xipo=2 -m64 -xvector=simd
                  -xopenmp +FDO
                  srcalt = omp1.32
330.art_m      : -fast -xtarget=nehalem -xipo=2 -m64 -xopenmp +FDO
                  SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
                  OMP_NUM_THREADS=12
332.ampm_m     : -fast -xtarget=nehalem -fns=no -xdepend=no -m64

```

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=24
 export SUNW_MP_PROCBIND=TRUE
 export SUNW_MP_THR_IDLE=SPIN
 export OMP_NESTED=FALSE
 export STACKSIZE=16384
 export OMP_DYNAMIC=TRUE



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Notes/Tuning Information (Continued)

```
ulimit -s unlimited
```

```
/etc/system parameters:
```

```
tune_t_fsflushr=10  
autoup=900  
zfs:zfs_arc_max = 0x10000000  
lpg_alloc_prefer=1
```

For a description of Oracle Solaris Studio 12 Update 1 flags, portability flags and system parameters used to generate this result, please refer to Oracle-20100708-Studio-Solaris-x86.txt file in the flags directory.

Default BIOS settings used.

```
Intel Turbo Boost technology enabled, maximum 3.33 GHz(default)  
Intel Hyper-Threading technology enabled (default)
```