



OMPM2001 Result

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Oracle Corporation
Sun Blade X6270 M2 (Intel Xeon X5690 3.46 GHz)

SPECompMpeak2001 = 57894
SPECompMbase2001 = 52118

SPEC license #HPG0010 Tested by: Oracle Corporation Test site: Oracle Corporation Test date: Jan-2010 Hardware Avail: Mar-2011 Software Avail: Nov-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	77.1	77773	76.3	78618
312.swim_m	6000	157	38286	149	40189
314.mgrid_m	7300	152	48047	146	49962
316.applu_m	4000	121	32993	114	35015
318.galgel_m	5100	124	41124	97.1	52516
320.earthquake_m	2600	57.7	45036	43.9	59170
324.apsi_m	3400	71.1	47801	59.3	57382
326.gafort_m	8700	142	61450	141	61499
328.fma3d_m	4600	98.2	46842	87.2	52748
330.art_m	6400	44.1	144988	37.0	173125
332.ammp_m	7000	158	44191	158	44241

Hardware

CPU: Intel Xeon X5690
 CPU MHz: 3467
 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: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 300 GB 10000 RPM SAS2
 Other Hardware: Sun Blade 6000 Chassis

Software

OpenMP Threads: 24
 Parallel: OpenMP and Automatic parallel
 Operating System: Oracle Solaris 10 9/10
 Compiler: Oracle Solaris Studio 12.2
 File System: ufs
 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=1 -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
ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
ENV_OMP_NUM_THREADS=12
```

```
312.swim_m: -fast -xtarget=nehalem -xmodel=medium -Qoption ube -fsimple=3 -xipo=2 -m64
-xvector=simd -xopenmp -lmvec +FDO
```



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Notes/Tuning Information (Continued)

```

srcalt = ompl.32
ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
ENV_OMP_NUM_THREADS=12
314.mgrid_m: -fast -xtarget=nehalem -xopenmp -xautopar -xipo=2 -xvector=lib -xprefetch
             -xprefetch_level=3 -m64 -lmtmalloc +FDO
             ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
             ENV_OMP_NUM_THREADS=12
316.applu_m: -fast -xtarget=nehalem -xarch=generic -xipo=2 -xopenmp
             -xautopar -xvector=lib -m64 -lmtmalloc +FDO
318.galgel_m: -O3 -xtarget=nehalem -xpagesize=2M -xipo=2 -xvector=simd -m64 -xopenmp
             -xlic_lib=sunperf +FDO
             RM_SOURCES=lapak.f90
             ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
             ENV_OMP_NUM_THREADS=12
320.quake_m: -fast -xtarget=nehalem -fns=no -xalias_level=layout -xdepend=no -m64
             -xopenmp -lmvec +FDO
             srcalt = ompl.32
             ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
             ENV_OMP_NUM_THREADS=12
324.apsi_m: -fast -xtarget=nehalem -xipo=2 -m64 -xprefetch_level=3
            -xvector -xopenmp -lmtmalloc +FDO
            srcalt = ompl.32
            ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
            ENV_OMP_NUM_THREADS=12
326.gafort_m: -fast -xtarget=nehalem -xipo=1 -xarch=generic -xopenmp -xautopar
             -xvector=lib -m64 -lmtmalloc
328.fma3d_m: -fast -xtarget=nehalem -xipo=2 -m64 -xvector=simd -xopenmp +FDO
             srcalt = ompl.32
             ENV_SUNW_MP_THR_IDLE=SLEEP
330.art_m: -fast -xtarget=nehalem -xipo=2 -m64 -xopenmp -lmtmalloc +FDO
            ENV_SUNW_MP_PROCBIND=0 1 2 3 4 5 6 7 8 9 10 11
            ENV_OMP_NUM_THREADS=12
332.amp_m: -fast -xtarget=nehalem -fns=no -xdepend=no -m64 -xopenmp -lmvec +FDO

```

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
ulimit -s unlimited

Load Default BIOS Settings and then change the following
Hardware Prefetch Enabled
Adjacent Cache Line Prefetch Enabled
L1 Data Prefetch Enabled

Intel Turbo Boost Technology up to 3.73 GHz was enabled.



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Notes/Tuning Information (Continued)

For a description of Oracle Solaris Studio 12.2 flags, portability flags and system parameters used to generate this result, please refer to Oracle-20110301-Studio-Solaris-x86.txt file in the flags directory.