OMPM2001 Result

Oracle Corporation

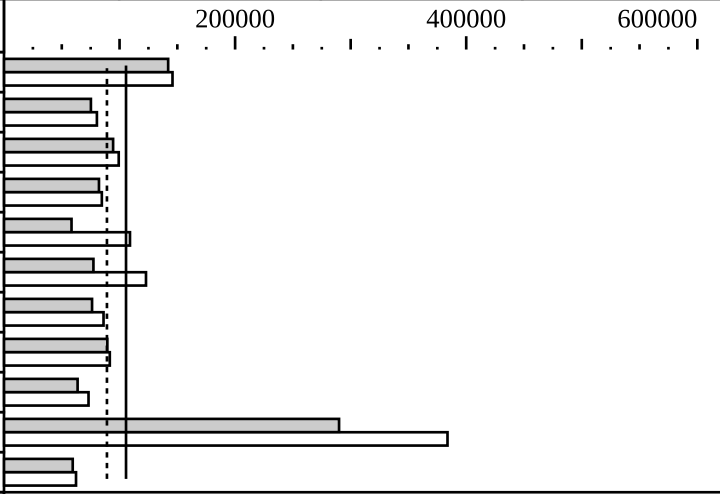
Sun Fire X4170 M3 (Intel Xeon E5-2690 2.9GHz)

SPECompMpeak2001 = 105601

SPECompMbase2001 = 89090

SPEC license #: HPG0010	Tested by: Oracle Corporation	Test site: Santa Clara	Test date: Apr-2012	Hardware Avail: Apr-2012	Software Avail: Jun-2012

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	42.2	142066	41.1	145818
312.swim_m	6000	79.8	75201	74.6	80395
314.mgrid_m	7300	77.3	94424	73.5	99277
316.applu_m	4000	48.7	82181	47.3	84653
318.galgel_m	5100	87.3	58432	46.8	109019
320.equake_m	2600	33.6	77390	21.2	122880
324.apsi_m	3400	44.6	76201	39.5	86133
326.gafort_m	8700	97.3	89433	95.0	91557
328.fma3d_m	4600	72.2	63695	62.9	73146
330.art_m	6400	22.1	289953	16.7	383799
332.ammp_m	7000	118	59474	112	62324



Hardware

CPU:	Intel Xeon E5-2690
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 300 GB 10K RPM SAS
Other Hardware:	None

Software

OpenMP Threads:	32
Parallel:	OpenMP and Automatic parallel
Operating System:	Oracle Solaris 11 11/11 (SRU 02)
Compiler:	C/C++/Fortran: Version 12.3 of Oracle Solaris Studio (patch update 1, tested with nightly build 20120313)
File System:	zfs
System State:	Default

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 -xpagesize=2M -xarch=generic  -xautopar
                    -xopenmp -xipo=2 -xprefetch  -xprefetch_level=3 -m64  +FDO
                   ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 312.swim_m      :  -fast -xtarget=nehalem -xpagesize=2M -xmodel=medium
```

Notes/Tuning Information (Continued)

```
                -Qoption ube -fsimple=3 -xipo=2 -m64 -xvector=simd -xopenmp +FDO
                 srcalt = ompl.32
                ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                 ENV_OMP_NUM_THREADS=16

 314.mgrid_m     : -fast -xtarget=nehalem -xopenmp -xautopar -xipo=2 -xprefetch
                   -xprefetch_level=3 -m64 +FDO
                   ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 316.applu_m     : -fast   -xtarget=nehalem -xpagesize=2M  -xarch=generic -xipo=2
                   -xopenmp -xautopar -m64 +FDO

 318.galgel_m    : -O3   -xtarget=nehalem -xpagesize=2M -xipo=2 -xvector=simd -m64 -xopenmp
                   -xlic_lib=sunperf
                    RM_SOURCES=lapak.f90
                   srcalt = dlamch
                   ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 320.equake_m    : -fast -xtarget=nehalem -fns=no -xalias_level=layout -xdepend=no
                   -m64 -xopenmp +FDO
                   srcalt = ompl.32
                   ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 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 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 326.gafort_m    : -fast -xtarget=nehalem -xipo=1 -xpagesize=2M -xarch=generic
                   -xopenmp  -xautopar -m64  +FDO

 328.fma3d_m     : -fast -xtarget=nehalem -xipo=2 -m64 -xvector=simd -xopenmp +FDO
                   srcalt = ompl.32

 330.art_m       : -fast -xtarget=nehalem -xipo=2 -m64 -xpagesize=2M -xopenmp +FDO
                   ENV_SUNW_MP_PROCBIND=0 1  2  3  4  5  6  7  8  9  10  11 12 13 14 15
                    ENV_OMP_NUM_THREADS=16

 332.ammp_m      : -fast -xtarget=nehalem -fns=no -xdepend=no -xpagesize=2M -m64
                   -xopenmp +FDO

Portablility 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=32
  export SUNW_MP_PROCBIND=TRUE
  export SUNW_MP_THR_IDLE=SPIN
```

Notes/Tuning Information (Continued)

```
      export OMP_NESTED=FALSE
      export STACKSIZE=16384
      export OMP_DYNAMIC=TRUE
      ulimit -s unlimited

   /etc/system parameters
     autoup=1000
     zfs:zfs_arc_max=0x400000000
     zfs:zfs_arc_min=0x400000000
     ncsize=0x10000
     lpg_alloc_prefer=1

    For a description of Oracle Studio Solaris 12.3 flags, portability flags
    and system parameters used to generate this result, please refer to
    Oracle-Studio-Solaris-X86_64-20120515.txt file in the flags directory.

    Default BIOS Settings were used, except:
         Energy Performance set to Performance

    Oracle’s Sun Fire X4170 M3 is now known as the Sun Server X3-2.
```