OMPM2001 Result

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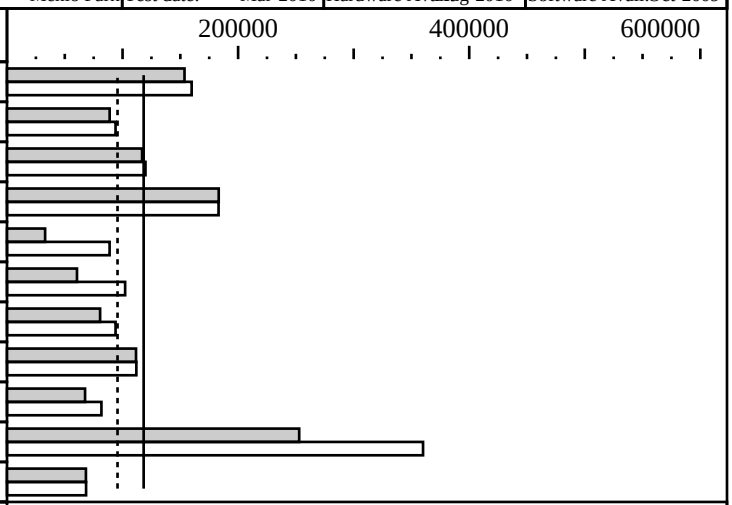
Oracle Corporation
Sun Fire X4470

SPECompMpeak2001 = 118264

SPECompMbase2001 = 95650

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	39.1	153623	37.5	159792
312.swim_m	6000	67.5	88840	63.9	93939
314.mgrid_m	7300	62.4	116909	60.9	119832
316.applu_m	4000	21.8	183220	21.8	183093
318.galgel_m	5100	155	32988	57.4	88790
320.equake_m	2600	42.9	60563	25.4	102232
324.apsi_m	3400	42.2	80575	36.2	93944
326.gafort_m	8700	77.9	111656	77.7	111943
328.fma3d_m	4600	68.1	67561	56.3	81711
330.art_m	6400	25.3	252859	17.8	360042
332.ammp_m	7000	102	68298	102	68433



Hardware

CPU:	Intel Xeon X7560
CPU MHz:	2266
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 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:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (64x4GB, DDR3-1066MHz, CL7, 2 Rank, ECC Reg)
Disk Subsystem:	1 x 500 GB, SATA, 7200 RPM
Other Hardware:	None

Software

OpenMP Threads:	64
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 -xipo=2 -xopenmp
                    -xautopar -xvector=lib -m64 -lmtmalloc +FDO
                     SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
```

Notes/Tuning Information (Continued)

```
                    OMP_NUM_THREADS=32

  312.swim_m      : -fast -xtarget=nehalem -xmodel=medium
                    -Qoption ube -fsimple=3 -xipo=2 -m64 -xvector=simd
                    -xopenmp -lmvec +FDO
                     srcalt = ompl.32
                     SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
                     OMP_NUM_THREADS=32

  314.mgrid_m     : -fast -xtarget=nehalem -xopenmp -xautopar -xipo=2
                    -lmtmalloc +FDO
                     SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
                     OMP_NUM_THREADS=32

  316.applu_m     : -fast -xtarget=nehalem -xarch=generic -xipo=2
                    -xmodel=medium -xopenmp -xautopar -xvector=lib
                    -m64 -aligncommon=16 -fns=no -lmtmalloc +FDO

  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
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
                     OMP_NUM_THREADS=32

  320.equake_m    : -fast -xtarget=nehalem -fns=no -xalias_level=layout
                    -xdepend=no -m64 -xopenmp -lmvec +FDO
                     srcalt = ompl.32
                     SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
                     OMP_NUM_THREADS=32

  324.apsi_m      : -fast -xtarget=nehalem -xipo=2 -m64 -xprefetch_level=3
                    -xvector -xopenmp -lmtmalloc +FDO
                     srcalt = ompl.32
                     SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                      12 13 14 15 16 17 18 19 20 21 22 23
                                      24 25 26 27 28 29 30 31
                     OMP_NUM_THREADS=32

  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 = ompl.32

  330.art_m       : -fast -xtarget=nehalem -xipo=2 -m64 -xopenmp +FDO
```

Notes/Tuning Information (Continued)

```
                    SUNW_MP_PROCBIND= 0  1  2  3  4  5  6  7  8  9 10 11
                                     12 13 14 15 16 17 18 19 20 21 22 23
                                     24 25 26 27 28 29 30 31
                    OMP_NUM_THREADS=32

  332.ammp_m      : -fast -xtarget=nehalem -fns=no -xdepend=no -m64
                    -xopenmp  -lmvec +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=64
  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

/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 2.66 GHz (default)
  Intel Hyper-Threading technology enabled (default)
```