



OMPL2001 Result

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Sun Microsystems
Sun Fire X2270 (Intel Xeon X5570 2.93GHz)

SPECompLpeak2001 = 254318
SPECompLbase2001 = 237781

SPEC license #HPG0010 | Tested by: Sun Microsystems | Test site: Menlo Park | Test date: Mar-2009 | Hardware Avail: Apr-2009 | Software Avail: Jun-2009

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	504	292217	504	292216
313.swim_l	12500	1376	145331	1311	152583
315.mgrid_l	13500	887	243413	804	268546
317.applu_l	13500	1703	126851	1703	126851
321.quake_l	13000	1123	185219	930	223712
325.apsi_l	10500	662	253927	656	256181
327.gafort_l	11000	740	237879	737	238754
329.fma3d_l	23500	1783	210836	1784	210708
331.art_l	25000	509	785590	394	1016266

Hardware		Software	
CPU:	Intel Xeon X5570	OpenMP Threads:	16
CPU MHz:	2933	Parallel:	OpenMP and Automatic parallel
FPU:	Integrated	Operating System:	OpenSolaris 2008.11
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core	Compiler:	Sun Studio 12 Update 1 (backend build 20090309)
CPU(s) orderable:	1,2 chips	File System:	zfs
Primary Cache:	32 KB I + 32 KB D on chip per core	System State:	Multi-User
Secondary Cache:	256 KB I+D on chip per core		
L3 Cache:	8 MB I+D on chip per chip		
Other Cache:	None		
Memory:	24 GB (6 x 4 GB DDR3-1333)		
Disk Subsystem:	1 x 1 TB, SATA, 7200 RPM		
Other Hardware:	None		

Notes/Tuning Information

Compiler Invocation:

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

Base tuning:

```
Fortran : -fast -xtarget=nehalem -xarch=generic -xpagesize=2M
          -xmodel=medium -xopenmp -xautopar -xipo=2 -xvector=lib
          -xprefetch -xprefetch_level=3 -m64 -lmtmalloc
C : -fast -m64 -xmodel=medium -fns=no -xalias_level=layout
    -xdepend=no -xopenmp -lmvec
ONESTEP=yes
```

Peak tuning:

ONESTEP=yes for all peak tests.

```
311.wupwise_l : -fast -xtarget=nehalem -xarch=generic -xpagesize=2M
                -xmodel=medium -xopenmp -xautopar -xipo=2 -xvector=lib
                -xprefetch -xprefetch_level=3 -m64 -lmtmalloc
313.swim_l : -fast -xpagesize=2M -xmodel=medium -xopenmp
             -xautopar -xipo=2 -xvector=lib
             -xprefetch -xprefetch_level=3 -m64 -lmtmalloc
             SUNW_MP_PROCBIND="8 10 12 14 9 11 13 15"
             OMP_NUM_THREADS=8
315.mgrid_l : -fast -xtarget=nehalem -xarch=generic
              -xpagesize=2M -xmodel=medium -xopenmp -xautopar
```



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Notes/Tuning Information (Continued)

```

-xipo=2 -xvector=lib -xprefetch -xprefetch_level=3 -m64
-lmtmalloc
SUNW_MP_PROCBIND="8 10 12 14 9 11 13 15"
OMP_NUM_THREADS=8
317.applu_1      : basepeak=yes
321.earthquake_1 : -fast -xmodel=medium -fns=no -xalias_level=layout
                  -m64 -xdepend=no -xopenmp -lmvec
                  SUNW_MP_PROCBIND="8 10 12 14 9 11 13 15"
                  OMP_NUM_THREADS=8
325.apsi_1      : -fast -xpagesize=2M -xmodel=medium -xopenmp -xautopar
                  -xipo=2 -xvector=lib -xprefetch -xprefetch_level=3
                  -m64 -lmtmalloc
327.gafort_1    : -fast -xmodel=medium -fstore -aligncommon=8
                  -xpagesize=2m -xipo=2 -m64 -xvector=simd
                  -xopenmp -lmvec
329.fma3d_1    : -fast -xpagesize=2M -xmodel=medium -xopenmp -xautopar
                  -xipo=2 -xvector=lib -xprefetch
                  -xprefetch_level=3 -m64 -lmtmalloc
331.art_1      : -fast -xpagesize=2M -xmodel=medium -xopenmp
                  -xautopar -xipo=2 -xvector=lib -xprefetch
                  -xprefetch_level=3 -m64 -lmtmalloc
                  SUNW_MP_PROCBIND="8 10 12 14 9 11 13 15"
                  OMP_NUM_THREADS=8

```

Extra art allowed flags:

```
331.art_1      : -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8
```

Base and Peak User Environment:

```

export OMP_NUM_THREADS=16
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

```

For a description of Sun Studio 12 Update 1 Compiler flags, portability flags and system parameters used to generate this result, please refer to SUN-20090504-Studio-Solaris-X86_64.txt file in the flags directory.

Platform Notes:

```

Intel Turbo Boost Technology up to 3.33 GHz
Default BIOS settings used except:
Hyper-Threading Technology Enabled (default),
Intel VT-d: Disabled. VT-d, if enabled, supports
remapping of I/O DMA transfers for virtualization.

```