OMPM2001 Result

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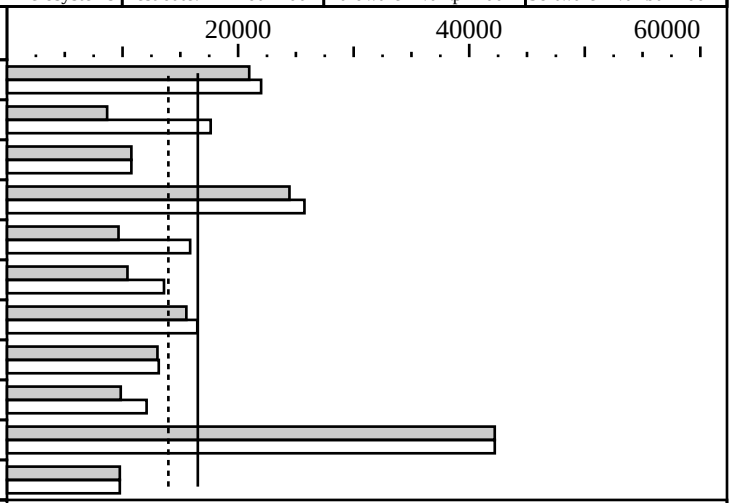
Sun Microsystems
Sun Fire E2900 (12 processor)

SPECompMpeak2001 = 16513

SPECompMbase2001 = 13966

SPEC license #:HPG0010 | Tested by: Sun Microsystems | Test site: Sun Microsystems | Test date: Jul-2004 | Hardware Avail:Apr-2004 | Software Avail:Jul-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	286	20961	273	21991
312.swim_m	6000	692	8666	340	17627
314.mgrid_m	7300	678	10764	678	10764
316.applu_m	4000	164	24444	155	25741
318.galgel_m	5100	528	9651	322	15850
320.equake_m	2600	249	10425	191	13586
324.apsi_m	3400	219	15521	206	16467
326.gafort_m	8700	668	13020	662	13133
328.fma3d_m	4600	467	9843	381	12081
330.art_m	6400	152	42209	152	42211
332.ammp_m	7000	717	9762	717	9762



Hardware

CPU:	Sun UltraSPARC IV
CPU MHz:	1200
FPU:	Integrated
CPU(s) enabled:	24 cores, 12 chips, 2 cores/chip
CPU(s) orderable:	4,8,12 (order by # of chips)
Primary Cache:	32KBI+64KBD per core on chip (64KBI+128KBD on chip)
Secondary Cache:	8MB(I+D) per core off chip (16MB(I+D) off chip)
L3 Cache:	None
Other Cache:	None
Memory:	96GB 16-way interleaved
Disk Subsystem:	1X73GB
Other Hardware:	--

Software

OpenMP Threads:	24
Parallel:	OpenMP + Auto Parallel
Operating System:	Solaris 9 4/04
Compiler:	Sun Studio 9
File System:	ufs
System State:	Multi-User

Notes/Tuning Information

```
Base Flags and Notes:
  ONESTEP=yes for all benchmarks

  C:   -fast -xopenmp -xalias_level=std -xipo=2
       -xprefetch_level=3
       -xprofile -lmtmalloc
  f90: -fast -autopar -openmp -xipo=2
       -xprefetch_level=3 -xprofile

  SUNW_MP_GUIDED_SCHED_WEIGHT=2

Portability and Extra flags:
  318.galgel_m: -e -fixed
  330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE

Peak Flags and  Notes:
  ONESTEP=yes for all benchmarks
  310.wupwise_m: -fast -openmp -autopar -xipo=2
                 -Qoption iropt -Athr,
                 -Ainline:inc=800:cp=1 -xprefetch_level=3
                 -xunroll=2 -xpagesize=512k -xprofile
  312.swim_m: -fast -xautopar -xreduction
```

Notes/Tuning Information (Continued)

```
                -Qoption iropt -Ainline:cs=700,
                -Atile:skewp:b368 -xpad=common:3022
                -xprefetch=latx:1.6 -lmtmalloc
    314.mgrid_m: basepeak = yes
    316.applu_m: -fast -openmp -xipo=2
                  -Qoption iropt -Aujam:inner=g
                 -xunroll=1 -xprefetch=latx:1.8 -xprofile
                 srcalt = ompl.32
    318.galgel_m: -fast -xipo=2 -openmp -autopar
                  -xlic_lib=sunperf -xarch=v8plusb
                  RM_SOURCES=lapak.f90
                  ENV_OMP_NUM_THREADS = 18
                  STACKSIZE = 16384
                  ENV_SUNW_MP_GUIDED_SCHED_WEIGHT=3
    320.equake_m: -fast -xipo=2 -xopenmp -xrestrict
                  -xalias_level=strong -xprefetch_level=3
                  -W2,-Apf:pdl=1 -Wc,-Qlp-ip=1-ol=1
                  -xpagesize=64k
                  -xprofile -lmtmalloc -lmopt -lm
                  srcalt = ompl.32
    324.apsi_m: -fast -openmp -autopar -xipo=2
                -xpagesize=8k -xprofile
                srcalt = ompl.32
    326.gafort_m: -fast -openmp -xprofile
                  srcalt = ompl.32
    328.fma3d_m: -fast -openmp -Qoption iropt -Athr,
                 -Apf:pdl=1 -Qoption cg -Qlp-ip=1
                 -xipo=2 -xprefetch_level=3 -xprofile
                 -lmtmalloc
                 srcalt = ompl.32
    330.art_m: -fast -xopenmp -xalias_level=std -xipo=2
               -xprefetch_level=3 -W2,-Apf:outer=0:pdl=1
               -Wc,-Qlp-ip=1 -xprofile -lmtmalloc
               srcalt = purdue1
    332.ammp_m: basepeak= yes

  Alternate Source:
    330.art_m: ompm-purdue1-20040324.tar
    316.applu_m, 320.equake_m, 324.apsi_m, 326.gafort_m,
    328.fma3d_m : ompm2001-srcl32bit-20020925.tar.gz

  Feedback optimization (-xprofile) is done as follows,
  unless otherwise noted:
    fdo_pre0:  rm -rf ‘pwd‘/../feedback.profile
    PASS1:     -xprofile=collect:./feedback
    PASS2:     -xprofile=use:./feedback

  Base and Peak User Environment:
    setenv STACKSIZE 2048
    setenv OMP_NUM_THREADS 24
    setenv OMP_DYNAMIC FALSE
    setenv SUNW_MP_PROCBIND "0 12 1 13 2 14 3 15  4
    16 5 17 6 18 7 19 8 20 9 21 10 22 11 23"
    setenv MPSSTACK 4M
    setenv MPSSHEAP 4M
    setenv LD_PRELOAD mpss.so.1
```

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Notes/Tuning Information (Continued)

```
    ulimit -s 524288

  Kernel Parameters (/etc/system):
    set autoup=900
    set tune_t_fsflushr=1

  System configuration details located at
    http://www.sun.com/servers/
```