OMPM2001 Result

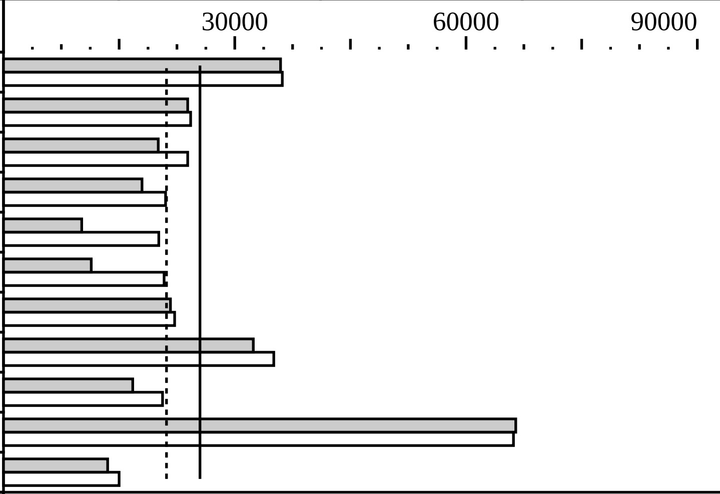
Fujitsu Limited
Fujitsu SPARC Enterprise T5240

SPECompMpeak2001 = 25488

SPECompMbase2001 = 21145

SPEC license #: HPG0003	Tested by: Sun Microsystems	Test site: Hillsboro	Test date: Mar-2008	Hardware Avail: Apr-2008	Software Avail: Apr-2008

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	167	35939	166	36166
312.swim_m	6000	251	23893	247	24277
314.mgrid_m	7300	364	20074	306	23894
316.applu_m	4000	223	17968	190	21025
318.galgel_m	5100	503	10146	253	20143
320.equake_m	2600	228	11383	125	20832
324.apsi_m	3400	157	21658	153	22200
326.gafort_m	8700	268	32404	248	35060
328.fma3d_m	4600	274	16764	223	20632
330.art_m	6400	96.3	66449	96.7	66152
332.ammp_m	7000	518	13510	467	14997



Hardware

CPU:	UltraSPARC T2 Plus
CPU MHz:	1415
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 8 threads/core
CPU(s) orderable:	2
Primary Cache:	16 KB I + 8 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	64 GB (16 x 4GB)
Disk Subsystem:	2 X 146GB (Seagate ST914602SSUN146G)
Other Hardware:	None

Software

OpenMP Threads:	128
Parallel:	OpenMP and Automatic Parallelization
Operating System:	Solaris 10 8/07
Compiler:	Sun Studio 12
File System:	UFS
System State:	Multi User

Notes/Tuning Information

```
Base flags:
  C flags:   -fast -xopenmp -xalias_level=std -xipo=2
             -xprefetch_level=2 -m64 -lmtmalloc -xprofile
  f90 flags: -fast -autopar -openmp -xipo=2 -xprefetch_level=2
       -m64 -xprefetch=latx:3 -xprofile
  ONESTEP=yes for all benchmarks in base

  Extra Base C flags: -Xc
  318.galgel_m portability flags: -e -fixed
  328.fma3d_m srcalt: ompm2001-fma3dsqrtinit-20070912, fix race condition
  330.art_m extra flags: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8
Peak flags:
  ONESTEP=yes for all benchmarks in peak

  310.wupwise: -fast -autopar -openmp -xipo=2 -m64
               -xprefetch=latx:3 -xprofile
  312.swim:    -fast -openmp -autopar -xunroll=7 -m64 -xipo=2
               -xpagesize=4m -xprefetch=latx:4 -xpad=common:1921
               -Qoption iropt -Atile:skewp
  314.mgrid:   -fast -openmp -xipo=2 -xprefetch_level=3 -m64
               -xpagesize=4m -xprefetch=latx:3 -xcode=abs32
               -xunroll=8 -xprofile
```

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Notes/Tuning Information (Continued)

```
                OMP_NUM_THREADS=128
                SUNW_MP_PROCBIND=true
   316.applu:   -fast -openmp -autopar -xipo=2 -xprefetch_level=3
                -m64 -xprefetch=latx:4  -xcode=abs32 -xunroll=2
                -xpagesize_heap=4m -xlinkopt=2
                OMP_NUM_THREADS = 80
                SUNW_MP_PROCBIND=
                  2   3   4   5   6  10  11  12  13  14
                 18  19  20  21  22  26  27  28  29  30
                 34  35  36  37  38  42  43  44  45  46
                 50  51  52  53  54  58  59  60  61  62
                 66  67  68  69  70  74  75  76  77  78
                 82  83  84  85  86  90  91  92  93  94
                 98  99 100 101 102 106 107 108 109 110
                114 115 116 117 118 122 123 124 125 126
   318.galgel:  -fast -xipo=2 -openmp -autopar -xlic_lib=sunperf
                -xprefetch=latx:3.0 -xunroll=8 -dbl_align_all=yes
                -stackvar -xlinkopt=2 -m64 -xprofile
                RM_SOURCES=lapk.f90
                OMP_NUM_THREADS = 64
                SUNW_MP_PROCBIND=
                  3   4   5   6  11  12  13  14
                 19  20  21  22  27  28  29  30
                 35  36  37  38  43  44  45  46
                 51  52  53  54  59  60  61  62
                 67  68  69  70  75  76  77  78
                 83  84  85  86  91  92  93  94
                 99 100 101 102 107 108 109 110
                115 116 117 118 123 124 125 126
   320.equake:  -fast -xopenmp -xipo=2 -xprefetch=latx:2
                -xprefetch_level=3 -m64 -xunroll=4 -lmtmalloc -xprofile
                -xpagesize=64K  -xautopar -xprofile
                srcalt=ompl.32
                OMP_NUM_THREADS = 96
                SUNW_MP_PROCBIND=
                  1   2   3   4   5   6   9  10  11  12  13  14
                 17  18  19  20  21  22  25  26  27  28  29  30
                 33  34  35  36  37  38  41  42  43  44  45  46
                 49  50  51  52  53  54  57  58  59  60  61  62
                 65  66  67  68  69  70  73  74  75  76  77  78
                 81  82  83  84  85  86  89  90  91  92  93  94
                 97  98  99 100 101 102 105 106 107 108 109 110
                113 114 115 116 117 118 121 122 123 124 125 126
   324.apsi:    -fast -openmp -xipo=2 -m64 -xpagesize=4M
                -xprefetch=latx:5 -xunroll=5 -xprofile
                OMP_NUM_THREADS = 128
                SUNW_MP_PROCBIND=
                3 11 19 27 35 43 51 59 67 75 83 91  99 107 115 123
                4 12 20 28 36 44 52 60 68 76 84 92 100 108 116 124
                5 13 21 29 37 45 53 61 69 77 85 93 101 109 117 125
                6 14 22 30 38 46 54 62 70 78 86 94 102 110 118 126
                2 10 18 26 34 42 50 58 66 74 82 90  98 106 114 122
                7 15 23 31 39 47 55 63 71 79 87 95 103 111 119 127
                1  9 17 25 33 41 49 57 65 73 81 89  97 105 113 121
                0  8 16 24 32 40 48 56 64 72 80 88  96 104 112 120
   326.gafort:  -fast -autopar -openmp -xipo=2 -xprefetch_level=3
```

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Notes/Tuning Information (Continued)

```
               -m64 -xpagesize=4m -xprefetch=latx:5 -xunroll=6
               -dbl_align_all=yes -stackvar -xprofile
               OMP_NUM_THREADS = 127
               SUNW_MP_PROCBIND=
               3 11 19 27 35 43 51 59 67 75 83 91  99 107 115 123
               4 12 20 28 36 44 52 60 68 76 84 92 100 108 116 124
               5 13 21 29 37 45 53 61 69 77 85 93 101 109 117 125
               6 14 22 30 38 46 54 62 70 78 86 94 102 110 118 126
               2 10 18 26 34 42 50 58 66 74 82 90  98 106 114 122
               7 15 23 31 39 47 55 63 71 79 87 95 103 111 119 127
               1  9 17 25 33 41 49 57 65 73 81 89  97 105 113 121
               0  8 16 24 32 40 48 56 64 72 80 88  96 104 112 120
  328.fma3d:   -fast -autopar -openmp -xipo=2 -xprefetch_level=3
               -xprefetch=latx:4 -m64 -xcode=abs32 -xprofile
               srcalt=ompl.32.sqrt.init
               ompm2001-fma3dsqrtinit-20070912, fix race condition
  330.art:     -fast -xopenmp -xautopar -xipo=2 -m64 -xprofile
               OMP_NUM_THREADS = 127
               SUNW_MP_PROCBIND=
               3 11 19 27 35 43 51 59 67 75 83 91  99 107 115 123
               4 12 20 28 36 44 52 60 68 76 84 92 100 108 116 124
               5 13 21 29 37 45 53 61 69 77 85 93 101 109 117 125
               6 14 22 30 38 46 54 62 70 78 86 94 102 110 118 126
               2 10 18 26 34 42 50 58 66 74 82 90  98 106 114 122
               7 15 23 31 39 47 55 63 71 79 87 95 103 111 119 127
               1  9 17 25 33 41 49 57 65 73 81 89  97 105 113 121
               0  8 16 24 32 40 48 56 64 72 80 88  96 104 112 120
  332.ammp:    -fast -xipo=2 -xopenmp -xalias_level=strong -lm
               -xprefetch=latx:2 -xlinkopt=2 -xpagesize_stack=8K
               -xpagesize_heap=4M
               -xprefetch_auto_type=indirect_array_access

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

The following user environment was used for base runs:
  ulimit -s 32768   (in /bin/sh)
  export OMP_DYNAMIC=FALSE
  export OMP_NUM_THREADS=127
  export SUNW_MP_PROCBIND="1-127"
  export SUNW_MP_THR_IDLE=SPIN
  export STACKSIZE=16384

The following patches were applied to Solaris Operating system:
  patch 127111-08

Sun Studio compiler patches are available at
  http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp
  The tested configuration included patch 124867-02, 124861-04,
  124863-01, 127000-01

The user environment for peak runs was same as for base except
as noted for each benchmark.
```

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Notes/Tuning Information (Continued)

```
For a description of Sun Studio 12 Compiler flags, portability flags
and system parameters used to generate this result, please refer to
SUN-20071009-Studio-Solaris-sparc.txt file in the flags directory.

This result was measured on a Sun SPARC Enterprise T5240
Note that these systems are electricly equivalent:
  - Sun SPARC Enterprise T5240
  - Fujitsu SPARC Enterprise T5240
```