OMPL2001 Result

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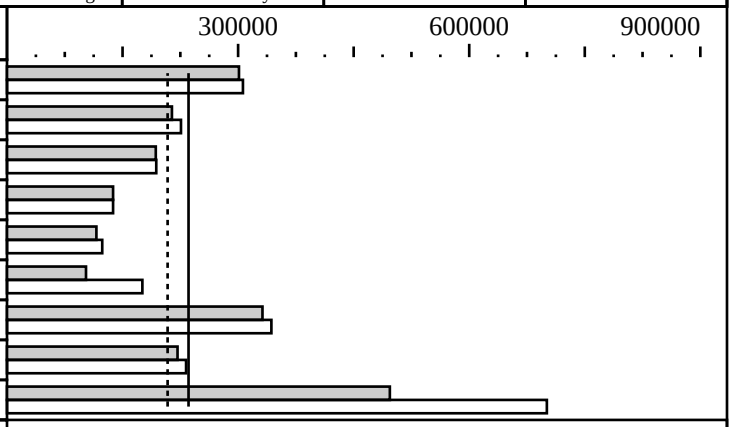
Fujitsu Limited
Fujitsu SPARC Enterprise T5440

SPECompLpeak2001 = 235655

SPECompLbase2001 = 208492

SPEC license #: HPG0003 | Tested by: Sun Microsystems | Test site: Burlington | Test date: May-2008 | Hardware Avail: Oct-2008 | Software Avail: Jul-2008

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	489	301113	481	306267
313.swim_l	12500	934	214091	886	225838
315.mgrid_l	13500	1118	193129	1115	193750
317.applu_l	13500	1569	137697	1569	137697
321.equake_l	13000	1792	116053	1683	123622
325.apsi_l	10500	1638	102558	956	175729
327.gafort_l	11000	531	331623	513	343199
329.fma3d_l	23500	1699	221370	1617	232467
331.art_l	25000	805	496963	571	700781



Hardware

CPU:	UltraSPARC T2 Plus
CPU MHz:	1414
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 8 threads/core
CPU(s) orderable:	1 to 4 chips
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:	256 GB (64 X 4GB)
Disk Subsystem:	1 X 146GB (Seagate ST914602SSUN146G)
Other Hardware:	None

Software

OpenMP Threads:	192
Parallel:	OpenMP and Automatic Parallelization
Operating System:	Solaris 10 5/08 + patch 137111-03
Compiler:	Sun Studio 12
File System:	UFS
System State:	Multi User

Notes/Tuning Information

```
Base Notes:
  ONESTEP=yes

  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

  329.fma3d_l srcalt: ompl2001-fma3dsqrtinit-20070912, fix race condition
  Extra Base C flags: -Xc

Setting allowed defines for art:
  331.art_l:     -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8

Peak Notes:
  ONESTEP=yes

  311.wupwise_l: -fast -autopar -openmp -xipo=2 -xprefetch_level=2
                 -xprefetch=latx:3 -m64 -xcode=abs44 -xprofile
                 OMP_NUM_THREADS=224
  313.swim_l:    -fast -openmp -autopar -xunroll=7 -m64 -xipo=2
                 -xpagesize=4m -xprefetch=latx:4 -xpad=common:1921
                 -Qoption iropt -Atile:skewp
                 OMP_NUM_THREADS=224
```

Notes/Tuning Information (Continued)

```
    315.mgrid_l:   -fast -openmp -xipo=2 -xprefetch_level=3 -m64
                   -xpagesize=4m -xprefetch=latx:3 -xcode=abs44 -xunroll=8
                   -xprofile
                   OMP_NUM_THREADS=224
    317.applu_l:   basepeak=1
    321.equake_l: -fast -xopenmp -xipo=2 -xprefetch=latx:2
                  -xprefetch_level=3 -m64 -xunroll=4 -lmtmalloc
                  -xpagesize=64K  -xautopar -xprofile
        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
        110 113 114 115 116 117 118 121 122 123 124 125 126 129 130 131 132
        133 134 137 138 139 140 141 142 145 146 147 148 149 150 153 154 155
        156 157 158 161 162 163 164 165 166 169 170 171 172 173 174 177 178
        179 180 181 182 185 186 187 188 189 190 193 194 195 196 197 198 201
        202 203 204 205 206 209 210 211 212 213 214 217 218 219 220 221 222
        225 226 227 228 229 230 233 234 235 236 237 238 241 242 243 244 245
        246 249 250 251 252 253 254
    325.apsi_l:    -fast -openmp -xipo=2 -m64 -xpagesize=4m
                   -xprefetch=latx:5 -xunroll=5 -xprofile
                   OMP_NUM_THREADS=160
        srcalt ompl.dd ompl2001-dd-20040128 was used for initial data
        distribution for array WORK
        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
        126 130 131 132 133 134 138 139 140 141 142 146 147 148 149 150 154
        155 156 157 158 162 163 164 165 166 170 171 172 173 174 178 179 180
        181 182 186 187 188 189 190 194 195 196 197 198 202 203 204 205 206
        210 211 212 213 214 218 219 220 221 222 226 227 228 229 230 234 235
        236 237 238 242 243 244 245 246 250 251 252 253 254
    327.gafort_l:  -fast -autopar -openmp -xipo=2 -xprefetch_level=3
                   -m64 -xpagesize=4m -xprefetch=latx:5 -xunroll=6
                   -dbl_align_all=yes -stackvar -xprofile
                   OMP_NUM_THREADS=224
    329.fma3d_l:   -fast -autopar -openmp -xipo=2 -xprefetch_level=3
                   -xprefetch=latx:3 -m64 -xprofile
        srcalt sqrt.init ompm2001-fma3dsqrtinit-20070912, fix race condition
    331.art_l:     -fast -xopenmp -xautopar -xipo=2 -m64 -xprofile
                   OMP_NUM_THREADS=255
                   SUNW_MP_PROCBIND=1-255

  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 settings were used in /etc/system:
    set tune_t_fsflushr=4  Controls how many seconds elapse between
      runs of the page flush daemon, fsflush.
    set autoup=60  Causes pages older than the listed number of
      seconds to be written by fsflush.
```

Notes/Tuning Information (Continued)

```
  set bufhwm=3000  Memory byte limit for caching I/O buffers
  set segmap_percent=1  Set maximum percent memory for file
    system cache

The following user environment was used for base runs:
  ulimit -s 32768   (in /bin/sh)
  export OMP_DYNAMIC=FALSE
  export OMP_NUM_THREADS=192
  export SUNW_MP_PROCBIND="1 9 17 25 33 41 49 57 65 73 81 89 97 105 113 121
    129 137 145 153 161 169 177 185 193 201 209 217 225 233 241 249 2 10 18
    26 34 42 50 58 66 74 82 90 98 106 114 122 130 138 146 154 162 170 178
    186 194 202 210 218 226 234 242 250 3 11 19 27 35 43 51 59 67 75 83 91
    99 107 115 123 131 139 147 155 163 171 179 187 195 203 211 219 227 235
    243 251 4 12 20 28 36 44 52 60 68 76 84 92 100 108 116 124 132 140 148
    156 164 172 180 188 196 204 212 220 228 236 244 252 5 13 21 29 37 45 53
    61 69 77 85 93 101 109 117 125 133 141 149 157 165 173 181 189 197 205
    213 221 229 237 245 253 6 14 22 30 38 46 54 62 70 78 86 94 102 110 118
    126 134 142 150 158 166 174 182 190 198 206 214 222 230 238 246 254 7
    15 23 31 39 47 55 63 71 79 87 95 103 111 119 127 135 143 151 159 167
    175 183 191 199 207 215 223 231 239 247 255 8 16 24 32 40 48 56 64 72
    80 88 96 104 112 120 128 136 144 152 160 168 176 184 192 200 208 216
    224 232 240 248 0 "
  export SUNW_MP_THR_IDLE=SPIN
  export STACKSIZE=16384

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

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, 127000-01

For a description of Sun Studio 12 Compiler flags, portability flags
and system parameters used to generate this result, please refer to
SUN-20080714-Studio-Solaris-sparc.txt file in the flags directory.

This result was measured on a Sun SPARC Enterprise T5440 Server.
Note that these systems are electricly equivalent:
  - Sun SPARC Enterprise T5440
  - Fujitsu SPARC Enterprise T5440
```