



OMPL2001 Result

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Sun Microsystems
Sun Fire 15K

SPECompLpeak2001 = 195619

SPECompLbase2001 = 158531

SPEC license #HPG0010 | Tested by: Sun Microsystems, Palo Alto | Test site: Sun Microsystems | Test date: Apr-2003 | Hardware Avail: Mar-2003 | Software Avail: Apr-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
311.wupwise_1	9200	594	247909	522	281935	
313.swim_1	12500	1029	194392	802	249284	
315.mgrid_1	13500	961	224746	911	237173	
317.applu_1	13500	1949	110801	1953	110612	
321.quake_1	13000	3193	65138	1998	104128	
325.apsi_1	10500	1610	104339	1610	104339	
327.gafort_1	11000	980	179672	987	178228	
329.fma3d_1	23500	2546	147689	2171	173210	
331.art_1	25000	1369	292223	590	678287	

Hardware

CPU: UltraSPARC III Cu
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 72
 CPU(s) orderable: 2-106
 Primary Cache: 32KBI+64KBD on chip
 Secondary Cache: 8MB(I+D) off chip
 L3 Cache: None
 Other Cache: None
 Memory: 576GB 16-way interleaved
 Disk Subsystem: 1X36GB
 550GB (4 9X18GB Sun StorEdge T3 arrays)
 Other Hardware: --

Software

OpenMP Threads: 64
 Parallel: OpenMP
 Operating System: Solaris 9 12/02
 Compiler: Sun ONE Studio 8 (pre-FCS build 3/9)
 File System: ufs with ufs logging
 System State: Multi-User

Notes/Tuning Information

Base Flags:

ONESTEP=yes for all benchmarks

C: -fast -xopenmp -xalias_level=std -xipo -Xc
 -xprefetch_level=2 -xarch=v9a -lmtmalloc -xprofile
 f90: -fast -openmp -xarch=v9a -xipo -autopar -xprofile

Extra art Base Flags:

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

Peak Flags:

ONESTEP=yes for all benchmarks

311.wupwise_1: -fast -openmp -autopar -Qoption iropt
 -Athr,-Ainline:inc=800:cp=1 -xipo=2
 -xprefetch_level=3 -xarch=v9a -xpagesize=512k -xprofile
 313.swim_1: -fast -openmp -xarch=v9a -xipo -autopar
 -xpagesize=512k -xprofile
 315.mgrid_1: -fast -openmp -xarch=v9a -xipo -autopar
 -xpagesize=512k -xprofile
 317.applu_1: -fast -openmp -xipo=2 -Qoption iropt
 -Aujam:inner=g -Qoption cg -Qlp-ol=1 -xarch=v9a -xprofile
 321.quake_1: -fast -xarch=v9a -xrestrict -xalias_level=strong
 -xopenmp -W2,-Ainline:call_in_pragma -xprefetch_level=3



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Notes/Tuning Information (Continued)

```

-xpagesize=64k -lmtmalloc -lmopt -lm -xprofile
325.apsi_l: basepeak=yes
327.gafort_l: -fast -xarch=v9a -openmp -xpagesize=512k -xprofile
329.fma3d_l: -fast -xarch=v9a -openmp -Qoption iropt -Athr,-Apf:pdl=1
-xipo -xpagesize=512k -lmtmalloc -xprofile
331.art_l: -fast -xarch=v9a -xopenmp
-xalias_level=strong -xprefetch_level=2
-xipo=2 -xpagesize=512k -W2,-Apf:outer=0
-lmopt -lm -lmtmalloc -xprofile

```

Alternate Source for Peak:

```

Change abs to fabs for art
Available as SPEC OMP Source: omp12001-fabs-20030401.tar.gz
331.art_l

```

Feedback is done as follows, unless otherwise noted:

```

fdo_pre0: rm -rf ./feedback.profile ./SunWS_cache
PASS1: -xprofile=collect:./feedback
PASS2: -xprofile=use:./feedback

```

Base and Peak User Environment:

```

unlimit stacksize (in /bin/csh)
setenv STACKSIZE 16384
setenv OMP_DYNAMIC FALSE
setenv MT_BIND_PROCESSOR TRUE
setenv MPSSSTACK 4M
setenv MPSSHEAP 4M
setenv LD_PRELOAD mpss.so.1

```

Kernel Paramters (/etc/system):

```

set autoup=900
set tune_t_fsflushr=1
set shmsys:shminfo_shmmax=0xffffffffffffffff
set shmsys:shminfo_shmseg=512
set shmsys:shminfo_shmmni=4096
set segvn_comb_thrshld=-1

```

Sun ONE Studio 8 (final) will ship May 2003

System configuration details located (as of Apr 2003) at
<http://www.sun.com/servers/highend/sunfire15k>