



# OMPL2001 Result

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Sun Microsystems  
Sun Fire 15K

SPECompLpeak2001 = 116755  
SPECompLbase2001 = 98228

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_1	9200	1033	142531	971	151614
313.swim_1	12500	1721	116186	1534	130382
315.mgrid_1	13500	1541	140172	1484	145518
317.applu_1	13500	2659	81221	2676	80713
321.quake_1	13000	4080	50984	3045	68301
325.apsi_1	10500	2381	70551	2381	70551
327.gafort_1	11000	1653	106460	1651	106574
329.fma3d_1	23500	4865	77285	4170	90171
331.art_1	25000	2621	152586	1067	374969

### 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: 32  
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 -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: [ompl2001-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 Parameters (/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>