



# OMPL2001 Result

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Sun Microsystems  
Sun Fire 15K

SPECompLpeak2001 = 149975

SPECompLbase2001 = 123214

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	747	197121	679	216710	
313.swim_1	12500	1299	153967	1044	191559	
315.mgrid_1	13500	1463	147617	1426	151458	
317.applu_1	13500	2207	97864	2216	97451	
321.quake_1	13000	3535	58842	2396	86824	
325.apsi_1	10500	2376	70700	2376	70700	
327.gafort_1	11000	1256	140116	1214	144934	
329.fma3d_1	23500	3289	114321	2844	132225	
331.art_1	25000	1785	224032	751	532548	

### 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: 48  
 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: 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 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>