



# CINT2000 Result

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Sun Microsystems  
Sun Fire X4200

SPECint\_rate2000 = 44.8  
SPECint\_rate\_base2000 = 40.7

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Mar-2006 Hardware Avail: May-2006 Software Avail: Jan-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	89.8	36.2	2	87.4	37.2
175.vpr	2	97.1	33.4	2	89.7	36.2
176.gcc	2	54.6	46.7	2	54.0	47.3
181.mcf	2	164	25.5	2	152	27.5
186.crafty	2	55.5	41.8	2	38.6	60.1
197.parser	2	118	35.3	2	117	35.6
252.eon	2	44.8	67.3	2	40.5	74.5
253.perlbnk	2	92.8	45.0	2	86.7	48.1
254.gap	2	71.1	35.9	2	64.8	39.4
255.vortex	2	73.5	60.0	2	58.3	75.6
256.bzip2	2	106	32.9	2	98.8	35.2
300.twolf	2	154	45.1	2	148	47.1

### Hardware

CPU: AMD Opteron (TM) 256  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
CPU(s) orderable: 1,2 (order by # of chips)  
Parallel: No  
Primary Cache: 64KBI + 64KBD (on chip) per core  
Secondary Cache: 1024KB (I+D) (on chip) per core  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 16GB (8x2GB, PC3200 CL3 DDR ECC Registered SDRAM)  
Disk Subsystem: SAS,36GB,10K RPM  
Other Hardware: None

### Software

Operating System: Solaris 10 1/06  
Compiler: Sun Studio 11  
File System: ufs  
System State: Multi-user

## Notes/Tuning Information

Compiler invocation:

C: cc  
CXX: CC

FDO: PASS1= -xprofile=collect:./feedback PASS2= -xprofile=use:./feedback  
fdo\_pre0: rm -rf ./feedback.profile

Integer base flags:

Base tuning for C programs : -fast -xcrossfile -xalias\_level=std +FDO ONESTEP=yes  
Base tuning for C++ programs: -fast -xcrossfile -xarch=amd64 +FDO ONESTEP=yes

Integer peak flags:

ONESTEP=yes +FDO for all benchmarks

164.gzip: -fast -xpagesize=2m -xcrossfile -M /usr/lib/ld/map.bssalign  
175.vpr: -fast -xpagesize=2m -W2,-Ainline:inc=200:cs=500 -M /usr/lib/ld/map.bssalign -lmopt -lm  
176.gcc: -fast -xipo=2 -Wd,-iropt-prof -xalias\_level=strong -xrestrict  
181.mcf: -fast -xpagesize=2m -xcrossfile -M /usr/lib/ld/map.bssalign  
186.crafty: -fast -xrestrict -xipo=2 -xprefetch -xarch=amd64 -xpagesize=2m  
-M /usr/lib/ld/map.bssalign -Wd,-iropt-prof -W2,-Ashort\_ldst:ldld



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## Notes/Tuning Information (Continued)

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-W2,-Ainline:rs=50
197.parser: -fast -xpagesize=2m -xipo=2 -W2,-Ainline:inc=200:cs=500 -M /usr/lib/ld/map.bssalign
252.eon:     -fast -xipo=2 -qoption CC -iropt-prof -xvector -qoption iropt -Abcopy -xalias_level
           -xarch=amd64 -xrestrict -Qoption ube -xcallee=yes -xregs=frameptr
253.perlbnk: -fast -xcrossfile -M /usr/lib/ld/map.bssalign -lbsdmalloc
254.gap:     -fast -xipo=2 -Wd,-iropt-prof -xvector -W2,-Abcopy -lbsdmalloc -xprefetch
           -W2,-Ainline:cp=5:rs=1300:irs=3300:inc=100 -W2,-Arestrict_g
255.vortex: -fast -xipo=2 -Wd,-iropt-prof -lbsdmalloc -xrestrict -xprefetch -M /usr/lib/ld/map.bssalign
256.bzip2:  -fast -xpagesize=2m -xcrossfile -xarch=sse2 -Xc -M /usr/lib/ld/map.bssalign -lbsdmalloc
300.twolf:   -fast -xipo=2 -Wd,-iropt-prof -xrestrict -M /usr/lib/ld/map.bssalign

```

### Portability:

```

186.crafty (base): -DSOLARIS_X86
186.crafty (peak): -DSOLARIS_X64
252.eon:          -DSPEC_CPU2000_LP64 -DUSE_STRERROR
253.perlbnk:      -DSPEC_CPU2000_SOLARIS_X86
254.gap:          -DSYS_IS_USG -DSYS_HAS_SIGNAL_PROTO -DSYS_HAS_TIME_PROTO -DSYS_HAS_CALLOC_PROTO

```

### Shell Environments:

Stack size set to unlimited via "ulimit -s unlimited"

Processes were bound to CPUs using submit=pbind  
Default BIOS setting was used

This result was measured on the Sun Fire X4200. In addition, Sun has submitted the same result for the Sun Fire X4100, which is electronically equivalent to the Sun Fire X4200.