



# CINT2000 Result

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Sun Microsystems  
Sun Fire X4100

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.

Sun Fire X4100 and Sun Fire X4200 are electronically equivalent.