



# CINT2000 Result

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Sun Microsystems  
Sun Fire X4200

SPECint\_rate2000 = 46.9  
SPECint\_rate\_base2000 = 41.8

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Mar-2006 Hardware Avail: May-2006 Software Avail: Nov-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	78.2	41.5	2	77.3	42.0
175.vpr	2	101	32.0	2	97.2	33.4
176.gcc	2	54.3	47.0	2	54.5	46.8
181.mcf	2	238	17.6	2	149	28.0
186.crafty	2	37.9	61.2	2	36.8	63.0
197.parser	2	132	31.6	2	106	39.6
252.eon	2	42.5	70.9	2	36.4	82.8
253.perlbnk	2	89.3	46.8	2	80.4	52.0
254.gap	2	56.9	44.9	2	56.3	45.3
255.vortex	2	65.9	66.9	2	61.5	71.7
256.bzip2	2	92.0	37.8	2	92.0	37.8
300.twolf	2	194	35.9	2	150	46.5

### 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: SUSE LINUX Enterprise Server 9 SP3 (x86\_64)  
Compiler: PathScale EKOPath(TM) Compiler Suite, Version 2.3  
File System: ufs  
System State: Multi-user

## Notes/Tuning Information

#### Portability flags:

```
186.crafty: -DLINUX_i386
252.eon: -DHAS_ERRLIST -DSPEC_CPU2000_LP64
253.perlbnk: -DSPEC_CPU2000_LINUX_I386 -DSPEC_CPU2000_NEED_BOOL
           -DSPEC_CPU2000_GLIBC22 -DSPEC_CPU2000_LP64
254.gap: -DSYS_IS_USG -DSYS_HAS_IOCTL_PROTO -DSYS_HAS_TIME_PROTO
          -DSYS_HAS_CALLOC_PROTO -DSPEC_CPU2000_LP64
255.vortex: -DSPEC_CPU2000_LP64
```

#### Feedback Optimization:

```
+FDO: PASS1=-fb_create fbdata PASS2=-fb_opt fbdata
```

#### Baseline Optimization Flags:

```
C programs: -Ofast +FDO
C++ programs: -Ofast +FDO
```

#### Peak Tuning Flags:

```
164.gzip: -O3 -ipa -WOPT:val=0 -OPT:unroll_size=0 +FDO
175.vpr: -O3 -ipa -m32 +FDO
176.gcc: -O3 -IPA:plimit=10000 -LNO:opt=0 -OPT:goto=off +FDO
```



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## Notes/Tuning Information (Continued)

```

181.mcf:      -O3 -ipa -IPA:field_reorder=on -m32 +FDO
186.crafty:   -Ofast -CG:local_fwd_sched=on -LNO:opt=0 -WOPT:val=0 +FDO
197.parser:   -O3 -ipa -m32 -IPA:ctype=on +FDO
252.eon:      -Ofast -CG:gcm=off:p2align_freq=1:prefetch=off -IPA:plimit=4000
              -OPT:treeheight=on -TENV:X=4:frame_pointer=off -fno-exceptions
              -LNO:fu=10:full_unroll_outer=on -GRA:optimize_boundary=on +FDO
253.perlbnk:  -O2 -ipa -OPT:Ofast:transform_to_memlib=off
              -fno-math-errno -IPA:plimit=10000 +FDO
254.gap:      -Ofast -IPA:min_hotness=5 -OPT:alias=disjoint -CG:movnti=1 +FDO
255.vortex:   -Ofast -OPT:goto=off +FDO
256.bzip2:    basepeak = true
300.twolf:    -O2 -CG:gcm=off:p2align_freq=100000
              -OPT:Ofast:unroll_times_max=8:unroll_size=256:alias=disjoint
              -WOPT:mem_opnds=on -m32 +FDO

```

taskset has been used to bind processes to CPUs  
Default BIOS settings 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.