



# CINT2000 Result

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Sun Microsystems  
Sun Ultra 40

SPECint2000 = 2057  
SPECint\_base2000 = 1836

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
164.gzip	1400	76.8	1823	76.6	1828	
175.vpr	1400	98.6	1420	95.1	1472	
176.gcc	1100	53.1	2070	53.6	2054	
181.mcf	1800	230	783	143	1257	
186.crafty	1000	37.5	2667	36.4	2744	
197.parser	1800	131	1375	104	1734	
252.eon	1300	42.1	3085	35.9	3619	
253.perlbnk	1800	88.6	2032	79.0	2279	
254.gap	1100	56.2	1957	55.5	1981	
255.vortex	1900	64.6	2943	60.1	3161	
256.bzip2	1500	90.7	1654	90.7	1654	
300.twolf	3000	188	1597	148	2033	

### Hardware

CPU: AMD Opteron (TM) 256  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 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: 8GB (4x2GB, PC3200 CL3 DDR ECC Registered SDRAM)  
 Disk Subsystem: SATA,250GB,7200 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
```

Default BIOS settings was used.  
System was tested in 1-chip configuration.