



# CINT2000 Result

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## Advanced Micro Devices

### Tyan Thunder K9QE (S4985) AMD Opteron (TM) 2220SE

SPECint\_rate2000 = 88.0

SPECint\_rate\_base2000 = 78.3

SPEC license #: 49 | Tested by: AMD Austin, TX | Test date: Jul-2006 | Hardware Avail: Sep-2006 | Software Avail: Aug-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	82.2	79.1	4	81.9	79.3
175.vpr	4	109	59.8	4	103	62.9
176.gcc	4	58.0	87.9	4	58.9	86.7
181.mcf	4	268	31.1	4	161	51.9
186.crafty	4	40.1	116	4	39.0	119
197.parser	4	142	59.0	4	111	75.0
252.eon	4	44.8	135	4	38.8	156
253.perlbnk	4	95.9	87.1	4	86.4	96.7
254.gap	4	61.4	83.2	4	61.4	83.2
255.vortex	4	69.4	127	4	64.5	137
256.bzip2	4	97.6	71.3	4	97.6	71.3
300.twolf	4	204	68.4	4	158	88.3

#### Hardware

CPU: AMD Opteron (TM) 2220SE  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2,4  
 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: 8x512MB, DDR2-667 CL4 ECC Reg  
 Disk Subsystem: SATA, 74GB  
 Other Hardware: None

#### Software

Operating System: SuSE Linux Enterprise Server 9 SP3 (64-bit)  
 Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.3  
 File System: Linux/ext3  
 System State: Multi-user, run level 3

## Notes/Tuning Information

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata

#### Baseline optimization flags:

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

#### 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\_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

#### Peak Tuning:

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)

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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
255.vortex:   -Ofast -OPT:goto=off -CG:p2align=on
              -GRA:optimize_boundary=on -IPA:min_hotness=120 +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

```

All memory slots populated on all CPU(s)  
taskset utility used to bind CPU(s) to processes.  
The system can be built using a Zippy 700W EPS12V power supply and any SSI-MEB case.  
BIOS Changes: Enable Basic ECC