



# CINT2000 Result

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IBM Corporation  
IBM System X 3455 (AMD Opteron (TM) 2214)

SPECint\_rate2000 = 70.1  
SPECint\_rate\_base2000 = 62.8

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Aug-2006 | Hardware Avail: Sep-2006 | Software Avail: Mar-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	105	61.9	4	105	61.9
175.vpr	4	130	50.1	4	126	51.5
176.gcc	4	72.4	70.5	4	72.4	70.5
181.mcf	4	314	26.6	4	189	44.1
186.crafty	4	52.7	88.0	4	52.5	88.3
197.parser	4	174	48.0	4	140	59.8
252.eon	4	56.0	108	4	50.2	120
253.perlbnk	4	123	68.0	4	109	76.7
254.gap	4	78.3	65.1	4	78.3	65.1
255.vortex	4	88.1	100	4	81.6	108
256.bzip2	4	120	58.2	4	120	58.2
300.twolf	4	252	55.2	4	196	70.9

### Hardware

CPU: AMD Opteron 2214  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2  
 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: 8x2GB, PC2-5300  
 Disk Subsystem: SATA, 80GB 10K RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux 9.0 SP3 SLES 64 bit Kernel 2.6.5-7.244-smp  
 Compiler: PathScale EKO Compiler Suite, Release 2.4  
 PathScale EKOPATH(TM) Compiler Suite, Release 2.4  
 File System: Linux/reiserfs  
 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  
 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

### 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  
 181.mcf: -O3 -ipa -IPA:field\_reorder=on -m32 +FDO



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## Notes/Tuning Information (Continued)

```
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.perlbmk: -O2 -ipa -OPT:Ofast:transform_to_memlib=off
-fno-math-errno -IPA:plimit=10000 +FDO
254.gap: basepeak = true
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
```