



# CINT2000 Result

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**IBM**  
eServer 326, 2.4 GHz AMD Opteron (TM)

SPECint\_rate2000 = 18.4  
SPECint\_rate\_base2000 = 16.4

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Oct-2004 | Hardware Avail: Oct-2004 | Software Avail: Oct-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	1	98.0	16.6	1	98.0	16.6
175.vpr	1	119	13.7	1	115	14.1
176.gcc	1	69.5	18.4	1	69.5	18.4
181.mcf	1	266	7.85	1	162	12.9
186.crafty	1	48.4	24.0	1	48.1	24.1
197.parser	1	155	13.4	1	138	15.2
252.eon	1	63.9	23.6	1	52.7	28.6
253.perlbnk	1	119	17.6	1	109	19.1
254.gap	1	75.3	16.9	1	72.0	17.7
255.vortex	1	96.6	22.8	1	90.4	24.4
256.bzip2	1	113	15.4	1	113	15.4
300.twolf	1	236	14.7	1	173	20.1

### Hardware

CPU: AMD Opteron 250  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
 CPU(s) orderable: 1,2  
 Parallel: No  
 Primary Cache: 64KBI + 64KBD on chip  
 Secondary Cache: 1024KB (I+D) on chip  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 8x512MB, DDR400  
 Disk Subsystem: SCSI, 36GB 10K RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux 8.0 SLES 64 bit Kernel 2.4.21-143-smp (SP3)  
 Compiler: PathScale EKO Compiler Suite, Release 1.4  
 File System: Linux/reiserfs  
 System State: Multi-user, run level 3

## Notes/Tuning Information

Tested by IBM Corporation

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

Baseline optimization flags:

C programs: -O3 -ipa +FDO  
 C++ programs: -Ofast +FDO

Portability Flags:

175.vpr: -DSPEC\_CPU2000  
 181.mcf: -DWANT\_STDC\_PROTO  
 186.crafty: -DLINUX\_i386 -DSPEC\_CPU2000  
 252.eon: -DHAS\_ERRLIST -DFMAX\_IS\_DOUBLE -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\_SIGNAL\_PROTO -DSYS\_HAS\_ANSI  
 -DSYS\_HAS\_CALLOC\_PROTO -DSPEC\_CPU2000\_LP64  
 255.vortex: -DSPEC\_CPU2000\_LP64  
 300.twolf: -DSPEC\_CPU2000 -DHAVE\_SIGNED\_CHAR



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## Notes/Tuning Information (Continued)

### Peak Tuning:

```

164.gzip: -Ofast +FDO
175.vpr: -O2 -ipa -OPT:alias=disjoint
-CG:p2align_freq=500000 -INLINE:aggressive=on
-IPA:space=300:plimit=10000:callee_limit=5000:linear=on
+FDO

176.gcc: basepeak = true
181.mcf: -O3 -ipa -IPA:field_reorder=on -m32
186.crafty: -Ofast +FDO
197.parser: -O3 -ipa -m32 -IPA:c_type=on +FDO
252.eon: -Ofast -CG:gcm=off:p2align_freq=1:prefetch=off
-OPT:treeheight=on -TENV:X=4:frame_pointer=off
-fno-exceptions -LNO:fu=10:full_unroll_outer=on
+FDO -IPA:plimit=4000:pu_reorder=1

253.perlbnk: -O3 -ipa +FDO -IPA:plimit=10000
254.gap: -O3 -ipa -OPT:transform_to_memlib=on +FDO
255.vortex: -Ofast -IPA:space=70:plimit=3000
-OPT:goto=off:unroll_analysis=off:unroll_size=0:unroll_times_max=8
-LNO:opt=0 -TENV:X=4 +FDO

256.bzip2: basepeak=TRUE
300.twolf: -O2 -OPT:unroll_times=8:unroll_size=256:alias=disjoint:Ofast
-CG:gcm=off:p2align_freq=100000 -WOPT:mem_opnds=on -m32 +FDO

```

### BIOS Settings:

ChipKill was DISABLED

### Compiler Flags File:

IBM-PathScale-20041025