



# CINT2000 Result

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## IBM

### IBM eServer e326 (AMD Opteron (TM) 252)

SPECint\_rate2000 = 39.6

SPECint\_rate\_base2000 = 35.5

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Jun-2005 | Hardware Avail: Feb-2005 | Software Avail: Apr-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	90.7	35.8	2	89.3	36.4
175.vpr	2	119	27.4	2	116	28.0
176.gcc	2	63.4	40.2	2	63.4	40.2
181.mcf	2	302	13.8	2	177	23.5
186.crafty	2	45.3	51.3	2	45.1	51.5
197.parser	2	151	27.6	2	124	33.7
252.eon	2	54.0	55.8	2	47.6	63.3
253.perlbnk	2	104	40.2	2	96.2	43.4
254.gap	2	65.8	38.8	2	65.8	38.8
255.vortex	2	76.5	57.6	2	74.4	59.3
256.bzip2	2	108	32.1	2	108	32.1
300.twolf	2	214	32.5	2	161	43.2

#### Hardware

CPU: AMD Opteron 252  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 2 chips, 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: 8 x 1GB, DDR400  
 Disk Subsystem: SCSI, 36GB 10K RPM  
 Other Hardware: None

#### Software

Operating System: SuSE Linux 9.0 SP1 SLES 64 bit Kernel 2.6.5-7.139-smp  
 Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.1  
 AMD Core Math Library 2.5.1  
 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

Base tuning for C programs: -O3 -ipa +FDO

Base tuning for C++ programs: -Ofast +FDO

Portability flags:

186.crafty: -DLINUX\_i386

252.eon: -DHAS\_ERRLIST -DSPEC\_CPU2000\_LP64 srcalt=fmax\_errno

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

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 +FDO

186.crafty: -Ofast +FDO

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## Notes/Tuning Information (Continued)

```
197.parser: -O3 -ipa -m32 -IPA:ctype=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
           -IPA:plimit=4000:pu_reorder=1 +FDO
253.perlbnk: -O3 -ipa -IPA:plimit=10000 +FDO
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
256.bzip2:   basepeak=true
300.twolf:   -O2 -OPT:unroll_times_max=8:unroll_size=256:alias=disjoint:Ofast
           -CG:gcm=off:p2align_freq=100000 -WOPT:mem_opnds=on -m32 +FDO
```

BIOS Configuration Notes  
Node Interleaving Disabled

Other Configuration Notes  
Taskset utility used to bind process to CPU(s)