



CINT2000 Result

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IBM

eServer 325, 2.0 GHz Opteron, gcc, 64-bit SuSE SLES8 Linux

SPECint_rate2000 = 14.4

SPECint_rate_base2000 = 13.1

SPEC license #: 11 | Tested by: IBM, Research Triangle Park, NC | Test date: Sep-2003 | Hardware Avail: Oct-2003 | Software Avail: Jul-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	1	136	11.9	1	130	12.5
175.vpr	1	143	11.3	1	143	11.4
176.gcc	1	79.4	16.1	1	77.8	16.4
181.mcf	1	334	6.26	1	201	10.4
186.crafty	1	57.0	20.3	1	54.8	21.2
197.parser	1	180	11.6	1	167	12.5
252.eon	1	76.8	19.6	1	70.9	21.3
253.perlbnk	1	138	15.1	1	138	15.1
254.gap	1	104	12.3	1	104	12.3
255.vortex	1	148	14.9	1	134	16.5
256.bzip2	1	143	12.2	1	139	12.5
300.twolf	1	284	12.3	1	234	14.9

Hardware

CPU: AMD Opteron 246
 CPU MHz: 2000
 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: 4x512MB PC2700 Reg ECC DDR SDRAM CL2.5
 Disk Subsystem: 1 x 40GB IDE
 Other Hardware: None

Software

Operating System: SuSE Linux 8.0 SLES 64 bit Kernel 2.4.19-249 (SP2)
 Compiler: SuSE gcc33 optional compiler (from SLES8 SP2)
 File System: Linux/reiserfs
 System State: Multi-user SuSE Run level 5

Notes/Tuning Information

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gcc is the SuSE optional gcc33 package C compiler (from SLES8 SP2)

+FDO: PASS1=-fprofile-arcs PASS2=-fbranch-probabilities

ONESTEP is used for all base runs

Portability: PORTABILITY=-DSPEC_CPU2000_LP64 is applied to all benchmarks (affecting only 176.gcc, 252.eon, 253.perlbnk, 254.gap, and 255.vortex)

176.gcc: Approved src.alt is used

186.crafty: CPORTABILITY=-DLINUX_i386

252.eon: CXXPORTABILITY=-DHAS_ERRLIST -DFMAX_IS_DOUBLE

Approved src.alt is used

253.perlbnk: CPORTABILITY=-DSPEC_CPU2000_LINUX_I386 -DSPEC_CPU2000_NEED_BOOL -DSPEC_CPU2000_GLIBC22

254.gap: CPORTABILITY=-DSYS_IS_USG -DSYS_HAS_IOCTL_PROTO -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO -DSYS_HAS_ANSI -DSYS_HAS_CALLOC_PROTO

Baseline C: gcc -O3 -funroll-all-loops +FDO

Baseline C++: g++ -O3 -funroll-all-loops +FDO

Peak tuning:

164.gzip: -O3 -funroll-all-loops -finline-limit=900 -freduce-all-givs +FDO



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Notes/Tuning Information (Continued)

```
175.vpr:      -O3 -funroll-loops -finline-limit=1000 +FDO
176.gcc:      -O3 -funroll-all-loops -finline-limit=900 +FDO
181.mcf:      -O3 -funroll-all-loops -m32 +FDO
              ONESTEP=yes
186.crafty:   -O3 -funroll-loops -fprefetch-loop-arrays
197.parser:   -O3 -funroll-all-loops -m32 +FDO
              ONESTEP=yes
252.eon:      -O3 -funroll-all-loops -ffast-math -finline-limit=3000 +FDO
253.perlbnk:  -O3 -funroll-all-loops -finline-limit=1800 +FDO
254.gap:      basepeak=true
255.vortex:   -O3 -funroll-all-loops -finline-limit=1000 +FDO
256.bzip2:    -O3 -funroll-all-loops -freduce-all-givs -finline-limit=2700 +FDO
300.twolf:    -O3 -funroll-all-loops -static -finline-limit=2000 -m32 +FDO
```

Set the following BIOS parameters:
DRAM Interleave = AUTO