CINT2000 Result

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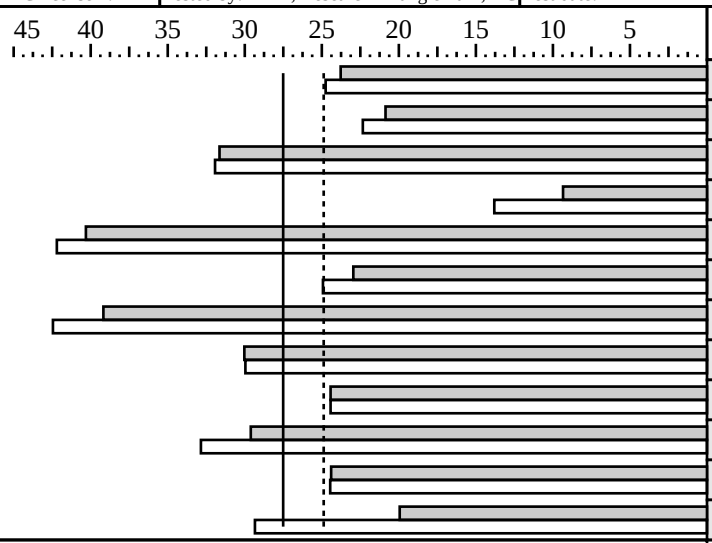
IBM

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

SPECint_rate2000 = 27.5

SPECint_rate_base2000 = 24.9

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	2	137	23.8	2	131	24.8
175.vpr	2	156	20.9	2	145	22.3
176.gcc	2	80.7	31.6	2	79.9	31.9
181.mcf	2	447	9.34	2	303	13.8
186.crafty	2	57.6	40.3	2	55.0	42.2
197.parser	2	182	23.0	2	168	24.9
252.eon	2	77.0	39.2	2	71.0	42.5
253.perlbmk	2	139	30.0	2	139	30.0
254.gap	2	104	24.4	2	104	24.4
255.vortex	2	149	29.6	2	134	32.8
256.bzip2	2	143	24.4	2	142	24.5
300.twolf	2	349	19.9	2	237	29.3

Hardware

CPU:	AMD Opteron 246
CPU MHz:	2000
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:	2x1024MB + 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.perlbmk, 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.perlbmk:    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 +FD0
  Baseline C++:     g++ -O3 -funroll-all-loops +FD0
  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.perlbmk:    -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
    Node Interleave = Disabled
    ACPI SRAT       = Enabled
```