



CINT2000 Result

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Sun Microsystems
Sun Fire V40z

SPECint_rate2000 = 17.6
SPECint_rate_base2000 = 16.0

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Jun-2004 Hardware Avail: Jul-2004 Software Avail: May-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	1	96.5	16.8	1	96.3	16.9
175.vpr	1	124	13.1	1	121	13.4
176.gcc	1	67.4	18.9	1	67.4	18.9
181.mcf	1	276	7.57	1	180	11.6
186.crafty	1	48.1	24.1	1	48.1	24.1
197.parser	1	155	13.5	1	145	14.4
252.eon	1	75.4	20.0	1	59.5	25.3
253.perlbnk	1	122	17.1	1	110	19.0
254.gap	1	76.0	16.8	1	76.0	16.8
255.vortex	1	99.7	22.1	1	99.7	22.1
256.bzip2	1	115	15.1	1	115	15.1
300.twolf	1	243	14.3	1	187	18.6

Hardware

CPU: AMD Opteron (TM) 850
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip
 CPU(s) orderable: 1,2,4
 Parallel: No
 Primary Cache: 64KBI + 64KBD on chip
 Secondary Cache: 1024KB (I+D) on chip
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 4x1GB, PC2700 CL2.5 DDR SDRAM ECC Registered
 Disk Subsystem: SCSI, 73GB, 10K RPM
 Other Hardware: None

Software

Operating System: SuSE Linux 8.0 SLES 64 bit (SP3)
 Compiler: PathScale EKO Compiler Suite, Release 1.1
 SuSE optional gcc 3.3 (from SLES8 SP3)
 File System: Linux/ext3
 System State: Multi-user, Run level 3

Notes/Tuning Information

Feedback-directed optimization is indicated by "+FDO", which means, unless otherwise noted:

```
PASS1: -fb_create fbdata
PASS2: -fb_opt fbdata
```

Compiler: pathcc (PathScale C) unless otherwise noted.

If other compilers are used, they are indicated as:

```
g++      Gnu C++
pathCC   PathScale C++
```

Integer base tuning:

```
C programs: pathcc -O3 -ipa +FDO
C++ programs: pathCC -Ofast +FDO
```

Peak Tuning:

```
164.gzip: -O3 -ipa -WOPT:val=0 -CG:p2align_freq=10000 +FDO
175.vpr: -O2 -ipa -OPT:alias=disjoint -LNO:prefetch Ahead=2
-CG:p2align_freq=500000 -INLINE:aggressive=on
-IPA:space=300:plimit=10000:callee_limit=5000:linear=on
```



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Notes/Tuning Information (Continued)

```

+FDO
176.gcc:      basepeak = true
181.mcf:      -O3 -static -OPT:Ofast -m32 +FDO
186.crafty:   basepeak = true
197.parser:   -O3 -ipa -m32 -IPA:ctype=on +FDO
252.eon:      g++ -O3 -msse2 -funroll-all-loops -ffast-math
              -finline-limit=5000
              Uses g++ style Feedback Directed Optimization:
                PASS1: -fprofile-arcs  PASS2: -fbranch-probabilities
              Previous feedback is removed prior to compiles, using:
                fdo_pre0 = rm -f *.da *.life analyz_prbprob.out
253.perlbnk:  -O3 -ipa -TENV:X=3 -IPA:min_hotness=5:plimit=20000 +FDO
254.gap:      basepeak=yes
255.vortex:   basepeak=yes
256.bzip2:    basepeak=yes
300.twolf:    -O2 -OPT:unroll_times=8:unroll_size=256:alias=disjoint:Ofast
              -CG:gcm=off:p2align_freq=100000 -TENV:X=4 +FDO -m32

```

Portability:

```

186.crafty:   -DLINUX_i386
252.eon:      -DHAS_ERRLIST  -DSPEC_CPU2000_LP64 -lm
              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

```

Notes:

BIOS build 2.1.0.9E, default setting was used.
Only one CPU was present in the system, other CPUs were physically removed.