Advanced Micro Devices
Tyan Thunder K9QE (S4985) AMD Opteron (TM) 2220SE

SPECint\_rate2000 = 88.0
SPECint\_rate\_base2000 = 78.3

Hardware

CPU: AMD Opteron (TM) 2220SE
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
CPU(s) orderable: 1, 2, 4
Parallel: No
Primary Cache: 64KBI + 64KBD on chip per core
Secondary Cache: 1024KB (I+D) on chip per core
L3 Cache: N/A
Other Cache: N/A
Memory: 8x512MB, DDR2-667 CL4 ECC Reg
Disk Subsystem: SATA, 74GB
Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 9 SP3 (64-bit)
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.3
File System: Linux/ext3
System State: Multi-user, run level 3

Notes/Tuning Information

+\text{FDO}: \text{PASS1}=-\text{fb}_\text{create fbdata} \quad \text{PASS2}=-\text{fb}_\text{opt fbdata}

Baseline optimization flags:
\text{C programs: } -O\text{fast} +\text{FDO}
\text{C++ programs: } -O\text{fast} +\text{FDO}

Portability Flags:
186.crafty: -DLINUX\_i386
252.eon: -DHAS\_ERRLIST -DSPEC\_CPU2000\_LP64
253.perlbmk: -DSPEC\_CPU2000\_LINUX\_i386 -DSPEC\_CPU2000\_NEED\_BOOL -DSPEC\_CPU2000\_LP64
254.gap: -DSYS\_IS\_USG -DSYS\_HAS\_IOCTL\_PROTO -DSYS\_HAS\_TIME\_PROTO -DSYS\_HAS\_CALL\_PROTO -DSPEC\_CPU2000\_LP64
255.vortex: -DSPEC\_CPU2000\_LP64

Peak Tuning:
164.gzip: -O3 -ipa -WOPT:val=0 -OPT:unroll\_size=0 +\text{FDO}
175.vpr: -O3 -ipa -m32 +\text{FDO}
176.gcc: -O3 -IPA:plimit=10000 -LNO:opt=0 -OPT:goto=off +\text{FDO}
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Notes/Tuning Information (Continued)

181.mcf: -O3 -ipa -IPA:field_reorder=on -m32 +FDO
186.crafty: -Ofast -CG:local_fwd_sched=on -LNO:opt=0 -WOPT:val=0 +FDO
197.parser: -O3 -ipa -m32 -IPA:ctype=on +FDO
252.eon: -Ofast -CG:gcm=off:p2align_freq=1:prefetch=off -IPA:plimit=4000
-OPT:treeheight=on -TENV:X=4:frame_pointer=off -fno-exceptions
-LNO:fu=10:full_unroll_outer=on -GRA:optimize_boundary=on +FDO
253.perlbmk: -O2 -ipa -OPT:Ofast:transform_to_memlib=off
-fno-math-errno -IPA:plimit=10000 +FDO
255.vortex: -Ofast -OPT:goto=off -CG:p2align=on
-GR:optimize_boundary=on -IPA:min_hotness=120 +FDO
256.bzip2: basepeak = true
300.twolf: -O2 -CG:gcm=off:p2align_freq=100000
-OPT:Ofast:unroll_times_max=8:unroll_size=256:alias=disjoint
-WOPT:mem_opnds=on -m32 +FDO

All memory slots populated on all CPU(s)
taskset utility used to bind CPU(s) to processes.
The system can be built using a Zippy 700W EPS12V power supply and any SSI-MEB case.
BIOS Changes: Enable Basic ECC