



CINT2000 Result

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Sun Microsystems
Sun Ultra 45

SPECint_rate2000 = 10.1
SPECint_rate_base2000 = 9.04

SPEC license #: 6 Tested by: Sun Microsystems Test date: Feb-2006 Hardware Avail: Jan-2006 Software Avail: Jan-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	1	188	8.63	1	169	9.62
175.vpr	1	216	7.54	1	213	7.63
176.gcc	1	146	8.77	1	113	11.3
181.mcf	1	408	5.12	1	294	7.11
186.crafty	1	101	11.5	1	89.6	12.9
197.parser	1	273	7.65	1	240	8.69
252.eon	1	122	12.4	1	115	13.1
253.perlbnk	1	206	10.1	1	191	10.9
254.gap	1	168	7.61	1	151	8.48
255.vortex	1	133	16.6	1	130	17.0
256.bzip2	1	222	7.85	1	219	7.96
300.twolf	1	373	9.34	1	334	10.4

Hardware

CPU: UltraSPARC IIIi
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 1,2 (order by # of chips)
Parallel: No
Primary Cache: 32KBI+64KBD per chip (on chip)
Secondary Cache: 1MB(I+D) per chip (on chip)
L3 Cache: None
Other Cache: None
Memory: 8GB(4x2GB DIMMs)
Disk Subsystem: SATA,250GB,7200 RPM
Other Hardware: None

Software

Operating System: Solaris 10 1/06
Compiler: Sun Studio 11
File System: ufs (default ufs logging on with Solaris 10)
System State: Multi-User

Notes/Tuning Information

Compiler invocation:

C: cc
CXX: CC

Integer base flags:

-fast -xipo=2 with ONESTEP=yes and feedback

Integer peak flags:

ONESTEP=yes for all benchmarks
Profile feedback used for those marked with +FDO

164.gzip: -x04 -xbuiltin=%all -xtarget=native -xalias_level=std
-xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp+filtering_margin=30,
-Qeps:do_spec_load=1 +FDO
175.vpr: -fast -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1,
-Qeps:rp_filtering_margin=30 -xipo=2 -xpagesize_stack=8K
-lmopt -lm +FDO
176.gcc: -fast -xipo=2 -Wc,-Qicache-chbab=1 -Wc,-Qeps:enabled=1
-Qeps:ws=32 -Wc,-Qdepgraph-early_cross_call=1
-Wc,-Qms_pipe-pref_prolog -l12amm +FDO



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Notes/Tuning Information (Continued)

```

181.mcf: -fast -xipo=2 -xprefetch_level=3 -Wc,-Qeps:enabled=1 -W2,-Apf:l1list=3:noninnerl1list
186.crafty: -fast -xpagesize=8k -xipo=2 -xalias_level=strong
           -W2,-Ashort_ldst -xinline= -xprefetch -xrestrict
           +FDO (-xlinkopt during pass2)
197.parser: -fast -xipo=2 -xalias_level=strong -Wc,Qgsched-T6
           -Wc,-Qipa:valueprediction -Wc,-Qms_pipe-prefstrong=0,
           -Qlp-pt=weak +FDO
252.eon: -fast -xipo=2 -xalias_level=compatible -Qoption cg
          -Qeps:enabled=1 -xvector -Qoption iropt -Abcopy -xunroll=16
          +FDO
253.perlbnk: -fast -xipo -Wc,-Qeps:enabled=1,-Qeps:ws=16 -xalias_lvel=std
             -xsafe=mem -Wc,-Qiselect-funcalign=128,-Qicache-chbab=1
             -Wc,-Qiselect-sw_pf_tbl_th=40,-Qeps:do_spec_load=1 +FDO
254.gap: -fast -xipo=2 -xalias_level=strong -xvector -xprefetch_level=3 -W2,-Abcopy +FDO
255.vortex: -fast -xrestrict -xipo=2 -Wc,-Qeps:enabled=1
            -W2,-Ainline:recursion=1:cs=400:irs=5000
            -Wc,-Qdepgraph-early_cross_call=1 -Wc,-Qiselect-funcaligh=64
            -Wc,-Qpeep-Sh0 -W2,-crit -xprefetch=latx:1.7 -fsimple=1
            -Wc,-Qiselect-sw_pf_tbl_th=30 -Wc,-Qicache-chbab=1
            -W2,-Ainline:inc=300 -l12amm +FDO
256.bzip2: -fast -xipo=2 -xalias_level=strong -xrestrict
            -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1 +FDO
300.twolf: -fast -xalias_level=strong -xsafe=mem -xipo=2
            -xprefetch=no%auto -Wc,-Qms_pipe_intdivusefp -xinline= +FDO

```

Feedback is done as follows, unless otherwise noted:

```

fdo_pre0: rm -rf ./feedback.profile ./SunWS_cache
PASS1: -xprofile=collect:./feedback
PASS2: -xprofile=use:./feedback

```

Portability:

```

176.gcc: -Dalloca=__builtin_alloca -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DSUN
253.perlbnk: -DSPEC_CPU2000_SOLARIS
254.gap: -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO -DSYS_HAS_CALLOC_PROTO

```

Shell Environments:

```

Stack size set to unlimited via "ulimit -s unlimited"
MPSSHEAP=4M
MPSSSTACK=4M
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1

```

Only one CPU was present on the system